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An Ecological Characterization of Coastal Maine
(North and East of Cape Elizabeth)
Volume 4: Appendices

(U.S.) Fish and Wildlife Service
Newton Corner, MA

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Stewart I. Fefer, and Patricia A. Schettig.

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The report is a collection of information which will aid decision makers on key environmental issues that impact fish and wildlife resources and their supporting ecosystems on the coast of Maine.

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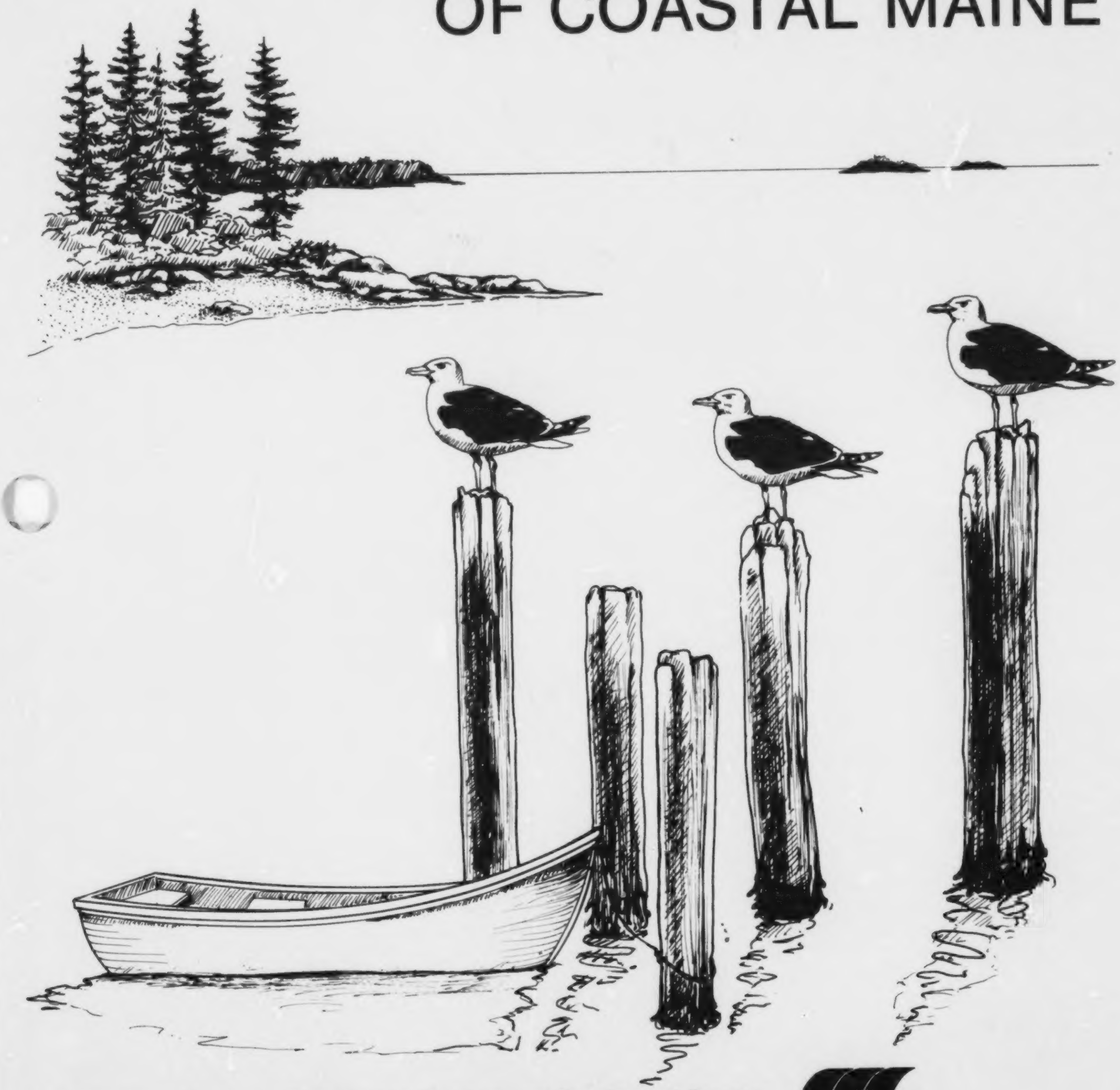
October 1980

AN ECOLOGICAL CHARACTERIZATION OF COASTAL MAINE



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Volume Four

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The Biological Services Program was established within the U.S. Fish and Wildlife Service to supply scientific information and methodologies on key environmental issues that impact fish and wildlife resources and their supporting ecosystems. The mission of the program is as follows:

- To strengthen the Fish and Wildlife Service in its role as a primary source of information on national fish and wildlife resources, particularly in respect to environmental impact assessment.

- To gather, analyze, and present information that will aid decisionmakers in the identification and resolution of problems associated with major changes in land and water use.

- To provide better ecological information and evaluation for Department of the Interior development programs, such as those relating to energy development.

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AN ECOLOGICAL CHARACTERIZATION OF COASTAL MAINE
(North and East of Cape Elizabeth)

Stewart I. Fefer and Patricia A. Schettig
Principal Investigators

Volume 4

Appendices

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CHAPTER 1

List of Species (Common and Scientific Names)
Whose Common Names Appear in the Text

Common name	Scientific name
ALGAE, BACTERIA, FUNGI AND MOSSES	
Algae	
brown	*Laminaria* spp. *Fucus vesiculosus* *Ascophyllum nodosum* *Agarum* spp.
filamentous	*Lyngbia* sp. *Vaucheria* sp. *Ulothrix* sp. *Urospora* sp.
green	*Bangia* sp. *Enteromorpha* sp.
red	*Chondrus crispus* *Polysiphonia* spp.
Bacteria	*Pseudomas* sp. *Virbrio* sp. *Flavobasterium* sp. *Anthrobacter caulobacter* *Hyphomicrobrium* sp. *Cytophaga* sp. *Acinetobacter* sp. *Photobacterium* sp.
Diatoms	*Asterionella* spp. *Thalassiosera* spp. *Nityochia* spp. *Skeletonema costatum* *Chaetocerus* spp.
Fungus	*Haliphthosos milfordensis* *Lagendinium* sp.
Kelps	*Laminaria* spp.
Laminarians	*Laminaria* spp. *Agarum* spp.
Lettuce, sea	*Ulva lactuca*
Moss	
sea (Irish)	*Chondrus crispus*
sphagnum	*Sphagnounum* spp.

Common name	Scientific name
(Moss continued)	
Rockweed	*Fucus vesiculosus*
Wrack, knotted	*Ascophyllum nodosum*
FISH	
Alligatorfish	*Aspidophoroides monopterygius*
Achory, striped	*Anchoa hepsetus*
Bass	
largemouth	*Micropterus salmoides*
smallmouth	*M. dolomieui*
striped	*Morone saxatilis*
sunfishes	*Centrarchidae*
temperate	*Percichthyidae*
Bluefish	*Pomatomus saltatrix*
Bullhead, brown	*Ictalurus nebulosus*
Burbot	*Lota lota*
Butterfish	*Eprilus triacanthus*
Capelin	*Mallotus villosus*
Carp	*Cyprinus carpio*
Chub	
creek	*Semotilus atromaculatus*
lake	*Conesius plumbeus*
Cod, Atlantic	*Gadus morhua*
Cunner	*Tautogolabrus adspersus*
Cusk	*Brosme brosme*
Dace	Cyprinidae
blacknose	*Rhinichthys atratulus*
finescale	*Phoxinus neogaeus*
longnose	*R. cataractae*
northern red belly	*Phoxinus eos*
pearl	*Semotilus margarita*
Dogfish, spiny	*Squalus acanthias*
Eel	
American	*Anguilla rostrata*
conger	*Conger oceanicus*
Elvers (see Eel, American)	
Fallfish	*Semotilus corporalis*
Flounder, lefteye	
fourspot	*Paralichtys oblongus*
summer	*Paralichtys dentatus*
windowpane	*Scophthalmus aquosus*
Flounder, righteye	
American plaice	*Hippoglossoides platessoides*
smooth	*Liopsetta putnami*
winter	*Pseudopleuronectes american*
witch	*Glyptocephalus cynoglossus*

Common name	Scientific name
(Fish continued)	
Goosefish	*Lophius americanus*
Gunnel, rock	*Pholis gunnellus*
Haddock	*Melanogrammus aeglefinis*
Hagfish, Atlantic	*Myxine glutinosa*
Hake	
red	*Urophycis chuss*
silver	*Merluccius bilinearis*
spotted	*Urophycis regius*
white	*Urophycis ternuis*
Halibut, Atlantic	*Hippoglossus hippoglossus*
Herring	
alewife	*Alosa pseudoharengus*
American shad	*A. sapidissima*
Atlantic menhaden	*Brevoortia tyrannus*
blueback	*A. aestivalis*
herring	*Clupea harengus*
hickory shad	*A. mediocris*
Jack, crevalle	*Caranx hiipos*
Killfish, banded	*Fundulus diaphanus*
Lamprey, sea	*Petromyzon marinus*
Lance, American sand	*Ammodytes americanus*
Leopard, pickerel	*Esox* sp.
Lumpfish	*Cyclopterus lumpus*
Mackerel, Atlantic	*Scomber scobrus*
Menhaden, Atlantic	*Brevoortia tyrannus*
Minnow	Cyprinidae
fathead	*Pimephales promelas*
Mummichog	*Gundulus heteroclitus*
Perch	
ocean (sea redfish)	*Sebastes marinus*
white	*Morone americana*
yellow	*Perca flavescens*
Pickerel, chain	*Esox niger*
Pipefish, northern	*Lyngnathus fuscus*
Plaice, American	*Hippoglossoides platessoides*
Pollock	*Pollachius virens*
Pout, ocean	*Macrozoextraireces americanus*
Raven, sea	*Hemitripterus americanus*
Redfish	*Sebastes marinus*
Rockling, fourbear	*Enchelyopus cimbrius*
Salmonids (salmon and trout)	Salmonidae
Atlantic	*Salmo salar*
coho	*Onxorhynchus kisutch*
landlocked	*Salmo salar*

(continued)

Common name	Scientific name
(Fish continued)	
Sculpin	
arctic hookear	*Artediellus uncinatus*
longhorn	*Myoxocephalus octodecimspinosus*
grubby	*Myoxocephalus aenaeus*
mailed scotpin	*Triglops nybelini*
moustache	*T. murrayi*
sea raven	*Hemitripterus americanus*
shorthorn	*M. seorpius*
slimy	*Cottus cognatus*
Scrup	*Stenotomus chrysops*
Searobin	
northern	*Prionotus carolinus*
striped	*P. evolans*
Seasnail	*Liparis atlanticus*
Shanny	
daubed	*Lumpenus maculatus*
radiated	*Ulvaria sukkifurcata*
Shark	
spiny dogfish	*Squalus acanthias*
white	*Carcharodon carcharias*
Shiner	
blackchin	*Notropis heterodon*
blacknose	*N. heterolepis*
bridle	*N. bifrenatus*
golden	*Notemigonus cryoieucas*
Silverside, Atlantic	*Menidia menidia*
Skate	
barndoor	*Raja laevis*
little	*R. erinacea*
smooth	*R. senta*
thorny	*R. radiata*
winter	*R. ocellata*
Smelt, rainbow	*Osmerus mordax*
Snakeblenny	*Lumpenus lumpretaeformis*
Stickleback	
blackspotted	*Gasterosteus wheatlandi*
brook	*Culaea inconstans*
four-spine	*Apeltes quadracus*
nine-spine	*Pungituis pungitius*
three-spine	*Gasterosteus aculeatus*
Sturgeons	
Atlantic	*Acipenser oxyrhynchus*
shortnose	*Acipenser brevirostrum*
Sucker	
longnose	*Catostomus catastomus*
white	*C. commersoni*

(continued)

Common name	Scientific name
(Fish continued)	
Sunfish	
pumpkinseed	*Lepomis gibbosus*
redbreast	*Lepomis auritus*
Tautog	*Tautoga onitis*
Tomcod, Atlantic	*Microgadus tomcod*
Trout	
brook	*Salvelinus fontinalis*
brown	*Salmo trutta*
lake	*Salvelinus namaycush*
rainbow	*Salmo gairdneri*
Tuna, bluefin	*Thunnus thynnus*
Whitefish, round	*Prosopium cylindraceum*
Wrymouth	*Cryptacanthodes maculatus*
HIGHER VASCULAR PLANTS	
Adder's tongue	*Ophioglossum vulgatum*
Alder	*Alnus* spp.
speckled	*A. rugosa*
Apple, wild	*Pyrus malus*
Arbor-vitae	*Thuja occidentalis*
Arrowgrass	*Triglochin maritima*
Arrowhead	*Sagittaria latifolia*
Ash	
black	*Fraxinus nigra*
green	*F. pennsylvanica*
white	*F. americana*
Aspen	*Populus* spp.
bigtooth	*P. grandidentata*
quaking	*P. tremuloides*
Aster	*Aster* spp.
	Aster foliaceus
pinweed	*Aster linariifolius*
salt marsh	*A. novibelgii*
Basswood, American	*Tillia americana*
Bayberry	*Myrica pensylvanica*
Bedstraw	*Galium* spp.
	Galium obtusum
Beachgrass, American	*Ammophila breviligulata*
Beach-heath	*Hudsonia tomentosa*
Beech, American	*Fagus grandifolia*
Birch	
blue	*Betula caerulea-grandis*
gray	*B. populifolia*
paper	*B. papyrifira*
sweet	*B. lenta*
yellow	*B. alleghaniensis*

(continued)

Common name	Scientific name
(Higher vascular plants continued)	
Bittercress	
Long's	*Cardamine longii*
bittercress	*C. pennsylvanica*
	C. hirsuta
Blinks	*Montia lamprosperma*
Blueberry	*Vaccinium* spp.
highbush	*V. caesariense*
Bluets	*Houstonia lancelata*
	H. longifolia
Bogbean	*Menyanthes trifoliata*
Broomsedge	*Andropogon virginicus*
Bulrush	*Scirpus* spp.
	S. ceaspitosus
	S. cylindricus
	S. atrovirens
river	*S. fluviatilis*
water	*S. subterminalis*
great	*S. validus*
alkali	*S. paludosus*
Bunchberry	*Cornus canadensis*
Bur-reed	*Sparganium* spp.
Butternut	*Juglans cinerea*
Buttonbush	*Cephalanthus occidentalis*
Calypso	*Calypso bulbosa*
Cattail	*Typha* spp.
	T. latifolia
Cedar	
Northern white	*Thuja occidentalis*
Atlantic white	*Chamaecyparis thyoides*
Eastern red	*Juniperus virginiana*
Celery	
wild	*Vallisneria americana*
Cherry	
pin	*Prunus pensylvanica*
black	*P. serotina*
Chestnut	*Castanea dentata*
Cinquefoil	*Potentilla palustris*
Club-moss	
mountain	*Lycopodium selago*
Comandra	
northern	*Geocaulon lividum*
Coontail	*Ceratophyllum demersum*
Cordgrass	
prairie	*Spartina pectinata*
salt marsh	*S. alterniflora*
smooth	*S. alterniflora*
Crabapple	*Pyrus* spp.

(continued)

Common name	Scientific name
(Higher vascular plants continued)	
Cranberry	
large	Vaccinium macrocarpon
small	V. oxycoccus
Crowberry	
black	Empetrum nigrum
purple	E. atropurpureum
Currants	Ribes spp.
Dogwood	Cornus spp.
Dragon's-mouth	Arethusa bulbosa
Duckweed	
big	Spirodela polyrhiza
small	Lemna minor
Dusty miller	Artemisia stelleriana
Eelgrass	Zostera marina
Elm	
American	Ulmus americana
slippery	U. rubra
Featherfoil	Hattonia inflata
Fern	
bracken	Pteridium aquilinum
fragrant cliff	Dryopteris fragrans
Fir	
balsam	Abies balsamea
douglas	Pseudotsuga menziesii
Flag	
blue	Iris versicolor
sweet	Acorus calamus
Garlic, wild	Allium canadense
Gentian, fringed	Gentiana crinita
Gerardia, seaside	Gerardia maritima
Ginseng	Panax quinquefolius
Glasswort	Salicornia europea
Goldenrod	Solidago spp.
	S. lepida v. fallax
	S. lepida v. molina
seaside	S. sempervirens
tall	S. altissima
Gooseberries	Ribes spp.
Grass	
alkali	Puccinillia spp.
blue	Poa spp.
blue-joint	Calamagrostis canadensis
cotton	Eriophorum spp.
dune	Ammophila breviligulata
eel	Zostera marina
fescue	Festuca spp.
manna	Glyceria spp.
marsh	Spartina patens
	S. alterniflora
orchard	Dactylis glomerata
panic	Panicum dichotomum

(continued)

Common name	Scientific name
(Higher vascular plants continued)	
Lobelia	
lobelia	*Lobelia kalmii*
great	*L. siphilitica*
Loosetrife, purple	*Lythrum salicaria*
Maple	
mountain	*Acer spicatum*
Norway	*A. platanoides*
red	*A. rubrum*
silver	*A. saccharinum*
striped	*A. pensylvanicum*
sugar	*A. saccharum*
Marsh-elder	*Iva frutescens*
Marsh-felwort	*Lomatogonium rotatum*
Meadow-sweet	*Spiraea latifolia*
Milfoil, water	*Myriophyllum* spp.
Milk-vetch	*Astragalus alpinus*
Milkwort	*Polygala cruciata*
Monkey-flower	
common	*Mimulus ringens* v. *ringens*
estuary	*M. ringens* v. *colpophilus*
Moonwort	*Botrychium lunaria*
Oak	
black	*Quercus velutina*
bur	*Q. macrocarpes*
northern red	*Q. rubra*
white	*Q. alba*
Orach	*Atriplex patula*
Orchis, pale green	*Habenaria flava* v. *herbiola*
Parsnip, water	*Sium suave*
Pea, beach	*Lathyrus japonicus*
Pepperbush, sweet	*Clethra alnifolia*
Pinweed	*Lechea maritima*
Pine	*Pinus* spp.
eastern white	*P. strobus*
jack	*P. banksiana*
pitch	*P. rigida*
red	*P. resinosa*
scotch	*P. sylvestris*
Pipewort	*Eriocaulon parkeri*
Plantain	
seaside	*Palntago juncoides*
water	*Ranunculus ambigens*
Pondweed	*Potamogeton* spp.
bushy	*Najas flexilis*
horned	*Zannichellia palustris*
Pond-lily, yellow	*Nuphar microphyllum*
Poplar, balsam	*Populus balsamifera*
Primrose, birds-eye	*Primula laurentiana*

(continued)

(Higher vascular plants, grass continued)

reed	*Phragmites australis*
	P. communus
reed	*Phalaris arundinacea*
rice-cut	*Leersia oryzoides*
salt-meadow	*Spartina patens*
spike	*Distichlis spicata*
switch	*Panicum virgatum*
widgeon	*Ruppia maritima*
witch	*Agropyron repens*
Gum, black	*Nyssa sylvatica*
Hawkweed	*Hieracium* spp.
Hemlock, eastern	*Tsuga canadensis*
Hempweed, climbing	*Mikania scandens*
Hickory, shag	*Carya ovata*
Hobble, witch	*Virbernum alnifolium*
Honeysuckle	
honeysuckle	*Lonicera dioica*
swamp	*Rhododendron viscosum*
swamp-fly	*L. oblongifolia*
trumpet	*L. sempervirens*
Hophornbean	
American	*Carpinus caroliniana*
Eastern	*Ostrya virginiana*
Horehound, water	*Lycopus uniflorus*
Horesetail	*Equisetum fluviatile*
Huckleberry	
black	*Gaylussacia baccata*
dwarf	*G. dumosa*
Inkberry	*Ilex glabra*
Iris	
beachhead	*Iris hookeri*
slender blue fag	*I. prismatica*
Juneberry	*Amerlanchier* spp.
Juniper	
creeping	*Juniperus horizontalis*
hybird	*J. horizontalis* x *J. virginiana*
ground	*J. communis* var. *depressa*
Lady's-slipper, Ram's-head	*Cypripedium arietinum*
Ladies' tresses, southern slender	*Spiranthes gracilis*
Laurel	
mountain	*Kalmia latifolia*
pale	*K. polifolia*
sheep	*K. angustifolia*
Lavender, sea	*Limonium nashii*
Leatherleaf	*Chamaedaphne calyculata*
Lilaeopsis	*Lilaeopsis chinensis*

(continued)

Common name	Scientific name
(Higher vascular plants continued)	
Sedge	*Carex* spp.
	C. atherodes
	C. rariflora
	Carex silicea
	C. pensylvanica
Orono	*C. oronensis*
salt marsh	*C. paleacea*
three-way	*Dulichium arundinaceum*
Smartweed, water	*Polygonum amphibium*
Spatterdock	*Nuphar* spp.
Speedwell, marsh	*Veronica scutellata*
	V. amphetamine
Spike-rush	*Eleocharis* spp.
	E. rostellata
	E. parvula
Spiraea	
hardhack	*Spiraea tomentosa*
meadow sweet	*S. latifolia*
Spleenwort	
maiden-hair	*Asplenium trichomanes*
silvery	*Athyrium thelypteriodes*
Stachys	*Stachys tenuifolia*
St. John's wort, marsh	*Hypericum virginicum*
Stonewort	*Nitella* spp.
Sumac	*Rhus* spp.
	Rhus typhina
Swampcandle	*Lysimachia terrestris*
Sweetgale	*Myrica gale*

(continued)

Common name	Scientific name
(Higher vascular plants continued)	
Ragweed	*Ambrosia* spp.
Raspberry	*Rubus* spp.
Rattlesnake-plaintain, downy	*Goodyera pubescens*
Reed	*Phragmites communis*
Rice, wild	*Zizania aquatica*
Rose	
Virginia	*Rosa virginiana*
rugosa	*Rosa rugosa*
Rosemary	
bog	*Andromeda glaucophylla*
marsh	*Limonium nashii*
Rush	*Juncus greenei*
(unnamed)	*Juncus dudleyi*
(unnamed)	*J. alpinus*
bayonet	*J. militaris*
black	*J. gerardii*
soft	*J. effusus*
Salthay	*Apartina patens*
Saltwort	*Salsola kali*
Saltwort	*Salicornia europea*
Sandwort, mountain	*Arenaria groenlandica*
Screw-stem	*Bartonia paniculata*
Sea-blite	*Suaeda maritima*
Sea rocket	*Cakile edentula*

(continued)

Common name	Scientific name
(Higher vascular plants continued)	
Tamarack	*Larix laricina*
Tea	
Labrador	*Ledum groenlandicum*
New Jersey	*Ceanothus americanus*
Tearthumb, arrow-leaved	*Polygonum sagittatum*
Threesquare	*Scirpus americanus*
Twayblade, auricled	*Listera auriculata*
Unicorn-root	*Aletris farinosa*
Violet	*Viola brittoniana* *V. triloba*
Waterlily, white	*Nymphaea odorata*
Water-meal	*Wolffia columbiana*
Water-pimpernel	*Samolus parviflorus*
Water-plaintain	*Ranunclus ambigens*
Watershield	*Brasenia schreberi*
Waterweed	*Elodea* spp.
Weed	
mermaid	*Prosperpinaca palustris*
pickerel	*Pontederia cordata*
rattlesnake	*Hieracium venosum*
Wheat, strand	*Elymus arenarius*
Wicopy	*Dirca palustris*
Willow	*Salix* spp.
water	*Decodom verticillatus*
Woolgrass	*Scirpus cyperinus*
Yarrow	*Achillea borealis*
INSECTS AND CRAYFISH	
Aphid, balsam wooly	*Adelges piceae* (*Chermes abietis*)
Bees	*Hymenoptera*
Beetle	*Coleoptera*
Blackflies, larval	*Simuium* spp.
Budworm, spruce	*Choristoneura fumiferana*
Caddisfly	Trichoptera
Catterpillar, saddled prominent	*Heterocampa guttivitta*
Cranefly larvae	*Tipula* sp.
Crayfish	*Cambarus* spp.
Hornets	*Hymenoptera*
Mayflies	*Ephemeroptera*
Midge, chironomid	*Chironomus* spp.
Mites	*Acarina*
Mosquito	*Diptera* *Ades* spp.
Moth	*Lepidoptera*
gypsy	*Porthetria dispar*
satin	*Stipnotia salicis*

Common name	Scientific name
(Insects & Crayfish continued)	
Spruce budworm (see also Budworm, spruce)	
Stoneflies	*Plecoptera*
Spider	*Arachnida*
Springtail	*Anurida maritima*
Stonefly nymphs	*Plecoptera*
	Pheronarcys sp.
Wasps	*Hymenoptera*
	Ichneumonid
OTHER INVERTEBRATES	
Amphipod	*Acanthohaustorius millsi*
	Ampelisca abdita
scud	*Gammarus oceanicus*
	G. marinus
	G. tigrinus
	G. annulatus
	Amphiporeia virginiana
	Carinogammarus mucronata
	Corophium lacustre
	Corophium volutator
	Gammarellus angulosus
	Gammarus mucronatus
	Haustorius canadensis
	Hyale nilssoni
	Leptocheirus pinquis
	Marionogammarus stoerensis
	Melita spp.
	Melita nitida
	Orchestia grillus
	O. platensis
	Pagurus spp.
	Prothohaustorius deichmannae
	Psammonyx nobilis
	Talorchestria megaphthalma
	Unciola irrorata
	Unciola sp.
Arrowworm	*Sagitta elegans*
Barracle	*Balanus balanoides*
rock	*B. crenatus*
	B. improvisus

(continued)

Common name	Scientific name
(Insect and Crayfish continued)	
Bivalves	
baltic clam	*Macoma balthica*
softed-shelled clam	*Mra arenaria*
blue mussel	*Mytilus edulis*
mussel	*Musculus niger*
horse mussel	*Modiolus modiolus*
ribbed mussel	*M. demissus*
bivalve	*Nucula* spp.
	Cerastoderma pinnulatum
	Thyasira flexuosa
	Astarte undata
Bloodworm	*Glycera dibranchiata*
Bryozoan	
moss animals	Entoprocta
Chinaman's Hat	*Acmaea testudinalis*
Chinton	*Tonicella marmorea*
Cladoceran	
water flea	*Basmina longirostris*
Clam	
softed-shelled	*Mya arenaria*
baltic	*Macoma balthica*
gem	*Gemma gemma*
arctic	*Hiatella arctica*
Colelenterates	
sea anemone	*Metridium dianthus*
	Urticina crassicornis
	Obelia longissima
	Obelis sp.
	Sertularia spp.
	Cordylophora lacustris
Comb jellies	*Ctenohores*
	Bolinopsis infundibulum
	Pleurobranchis pileus
Copepods	*Microsetella norvegina*
	Acartia tonsa
	A. clausi (*A. hudsonica*)
	A. longiremis
	Oithona similis
	Temora longicornis
	Pseudocalanus minutus
	Eurytemora herdmani
	Centropages hamatus
	C. typicus
	Calanus finmarchicus
	Cyclops

(continued)

Common name	Scientific name
MARINE INVERTEBRATES	
Crab	
green	Carcinus maenas
mud	Rhithropanopeus harrisi
	Neopanope texana
xanthid	N. texana
	Rithropanopeus harrisi
rock or jonah	Cancer borealis
rock	C. irrotatus
sand or mud	C. irrotatus
horseshoe	Limulus limulus
Crustacean	Leptochelia repax
	Aeginella longicornis
Ctenophores-comb jellies	
	Bolinipsis infundibulum
	Pleurobrachie pileus
Cucumber	
sea	Cucumario frondosa
Dollar	
sand	Echinarachnius parma
Echinoderms	
common starfish	Asterias vulgaris
purple starfish	A. Forbesi
blood starfish	Henicia sanquinolenta
brittle starfish	Ophiopholis aculeata
basket starfish	Gorganocephalus arcticus
sea cucumber	Cucumaria frondora
sea urchin	Strongylocentrotus droehbachiensis
sun star	Crossaster papposus
Flatworm	Platyhelminths
Flea	
beach	Gamarus marinus
	G. annulatus
	G. tigrinus
	Carinogammarus mucronatus
water	Basmina longirostris
Gastropods	Hydrobia sp.
	Hydrobia totteni
periwinkle	Littorina saxatilis
	L. littorina
	L. obtusata
	Nassarius obsoletus
dug welk	Thais lapillus
	Polinices spp.
	Odostomia sp.
Hairworm	Nematodes
Hat	
chinaman's	Acmaea testudinalis
Hemichordates	Saccoglossus kowaledskii

Common name	Scientific name
(Marine Invertebrates continued)	
Holoplankton	
	Amphipoda
	Appendicularia
	Chaetognatha
	Cladocera
	Copepoda
	Euphausiacea
	Isopoda
	Medusae
	Pteropoda
Hydrozoans	Class Hydrozoa
hydroids	
Jellies	
comb	Ctenophora
	Bolinopsis infundibulum
	Pleurobranchia pileus
Isopod	*Chirodotea caeca*
	Edotea triloba
	Jaera sp.
	Jaera marina
	Cyathura polita
Jellyfish	*Coelenterate medusae*
medusae	*Cyanea capillate*
	Aurelia aurita
Krill, shrimp	*Euphausiid*
Limpet	*Acmaea testudinalis*
Lobster	
American	*Homarus americanus*
Medusae jellyfish	Cnidaria
	Cyanae capillata
	Aurelia aurita
Metroplankton	Annelida larva
	Brachyura larva
	Cirripedia larva
	Crustacean eggs
	Crustacean nauplii
	Decapoda larvae
	Echinodermata larvae
fish eggs	Gastropoda larvae
	Pelecypoda larva
	Pycnogonoida
Mollusc	
	Aeolidia aculeata
	Aeolidia papillosa
	Hiatella arctica
	Ischnochiton ruber
	Odostomia bisuturalis
	Modiolus modiolus

Common name	Scientific name
(Marine Invertebrates continued)	
Mussel	
blue	Mytilus edulis
horse	Modiolus modiolus
ribbed	M. demissus
mussel	Musculius niger
Nematode	
roundworm	Nematoda
Oligochaete, worms	Oligochaeta
Oyster	Crassostrea virginica
	Ostrea edulis
	Nucula spp.
Periwinkle	
common	Littorina littorea
smooth	L. obtusata
	L. saxatilus
Polychaete worms	Pygospio elegans
	Spiophanes bombyx
	Exogone hebes
	Scolecoloepides viridis
	Eteone longa
	Harmothoe imbricata
	Polydora ligni
	Spio setosa
	Paraonis fulgens
	Nereis succinea
	N. virens
	Streblospio benedicti
	Scoloplos sp.
	Heteromastus filiformis
	Nephtys caeca
	N. bucera
	Tharyx acutus
	Lepidonotus squamatus
	Spirorbis borealis

(continued)

Common name	Scientific name
(Marine Invertebrates continued)	
Polychaetes	
	Scolelepis squamata
	Capitella capitella
	Pectinaria hyperborea
	Fabricia sabella
Protochordates	
sea squirt	*Boltenia echinata*
	Amaroucium sp.
	Didemnum albidum
	Dendropoa carnea
Quahog	*Mercenaria mercenaria*
Red tide	*Gonyaulax excavata*
	(*G. tamarensis*)
Red tail	
bacterial infection	*Aerococcus viridians*
Rotifers, worms	*Aschelminthean*
Roundworm	*Nermesteans*
Sand dollar	*Echinarachnius parma*
Sand worm	*Nereis virens*
Scaleworm	*Lepidonotus squamata*
Scallops, sea	*Placopecten magellamicus*
Scud	*Gammarus oceanicus*
Shell	
jingle	*Anomia simplex*
pearly smooth	*Margarites helicinos*
Shrimp	
northern	*Pandalus borealis*
	Cragon sp.
	Mysidae
krill	*Euphausids*
	Paleamontes sp.
Snails	
mud	*Nassarius obsoletus*
moon	*Potinices duplical*
freshwater	*Ancylus fluviatilus*
Sponges	
green	*Halichondria panicea*
	Chalina oculata
Squid	
flying	*Illex illecebrosus*
long-finned	*Loligo peali*
Squirt	
sea	*Boltenia echinata*

(continued)

Common name	Scientific name
(Marine Invertebrates continued)	
Star	
brittle	Ophiopholis aculeata
basket	Gorganocephalus arcticus
Starfish	
common	Asterias vulgaris
purple	A. forbesi
blood	Henicia sanguinolenta
Sun - star	
common	Crossaster papposus
Tintinnids	
Trematodes	Gymnophallus sp.
	Parvatrema sp.
Tunicates	Appendicularia
Urchin	
sea	Strongylocentrotus droehbachachiensis
Whelk	
dog	Thais lapillus
Worms	
sand	Nereis virens
	Nepthys incisa
	Scolecolepides viridis
	Polydora sp.
	Nemertea
	Nematoda
	Polycheate - Polydora sp.
	Eteone longa
MARINE AND TERRESTRIAL MAMMALS	
Bat	
big brown	Eptesicus fuscus
red	Lasiurus borealis
hoary	L. cinereus
silver-haired	Lasionycteris noctivagans
little brown	Myotis lucifugus
keen's myotis	M. keenii
small-footed	M. leibii
eastern pipistrelle	Pipistrellus subflavus
Bear	
black	Ursus americanus
Beaver	Castor canadensis
Bobcat	Felis rufus
Chipmunk	
eastern	Tamias striatus
Cottontail	
new england	Sylvilagus transitionalis
Coyote	Canis latrans

Common name	Scientific name
(Marine and Terrestrial Mammals continued)	
Deer	
white-tailed	Odocoileus virginianus
Dolphins	
common	Delphinus delphis
striped	Stenella caeruleoalba
Atlantic white-sided	Lagenorhynchus acutus
white beaked	L. albirostris
bottlenose	Tursiops truncatus
risso's	Grampus griseus
Ermine	Mustela erminea
Fisher	
	Martes pennanti
Fox	
grey	Urocyon cinereoargenteres
red	Vulpes fulva
Hare	
snowshoe	Lepus americanus
Lemming	
southern bog	Synaptomys cooperi
Lynx	Felis lynx
Marten	Martes americana
Mice	
house	Mus musculus
Mink	Mestela vison
Mole	
hairy-tailed	Parascalops breweri
star-nosed	Condylura cristata
Moose	
Mouse	
deer	Peromyscus maniculatus
white-footed	P. leucopus
house	Mus musulus
meadow jumping	Zapus hudsonius
woodland jumping	Napaeozapus insignis
Muskrat	Ondatra zibethicus
Myotis	
keens	Myotis keenii
small-footed	M. leibii
little brown	M. lucifugus
	Lutra conadensis
Opossum, virginia	Didelphis virginiana
Otter, river	Lutra canadensis
Pipistrelle	
eastern	Pipistrellus subflavus
Porcupine	Erethizon dorsatum
Porpoises	
harbor	Phocoena phocoena
Raccoon	Procyon lotor
Rat	
Norway	Rattus norvegicus

(continued)

Common name	Scientific name
(Marine and Terristrial Mammals continued)	
Seal	
harbor	*Phoco vitulina*
harp	*P. groenlandica*
gray	*Halichoerus grypus*
hooded	*Cystophora cristata*
Shrew	
short-tailed	*Blarina blevicauda*
water	*Sorex palustris*
masked	*S. cinereus*
smokey	*S. fumeus*
Thompson's pigmy	*Microsorex thompsoni*
pygmy	*M. hoyi*
Skunk, striped	*Mephitis nigra*
Squirrel	
southern flying	*Glaucomys sabrinus*
northern flying	*G. sabrinus*
gray	*Sciurus carolinensis*
red	*Tamiasciurus hudsonicus*
Vole	
pine (woodland)	*Mircotus pinetorum*
meadow	*M. pennsylvanicus*
grapper's red-backed	*Clethroinmys gapperi*
Walrus	*Odobenus rosmarus*
Weasel	
long-tailed	*Mustela frenata*
Whale	
finback	*Balenoptera physolus*
minke	*B. acutorostrata*
blue	*B. musculus*
sei	*B. borealis*
northern right	*Balaena glacialis*
bowhead	*B. mysticetus*
long-finned pilot	*Globicephala melaena*
sperm	*Physeter catodon*
pigmy sperm	*Kogia breviceps*
killer	*Orcinus orca*
Woodchuck	*Marmota monax*
REPTILES AND AMPHIBIANS	
Bullfrog	*Rana catesbeiana*
Frog	
gray tree frog	*Hyla versicolor*
green	*Rana clamitans*
northern leopard	*R. pipiens*
pickerel	*R. palustris*
mink	*R. septentrionalis*
wood	*R. sylvatica*
Leatherback	
Atlantic	*Dermochelys coriacea*

Common name	Scientific name
(Reptiles and Amphibians continued)	
Loggerhead	
Atlantic	Caretta caretta
Newt	
red-spotted	Notophthalmus virdescens
Pepper	
northern springs	Hyla crucifer
Racer	
northern black	Coluber constrictor
Salamander	
four-toed	Hydromantes scutatum
spotted	Ambystoma maculatum
blue-spotted	A. laterale
red-backed	Plethodum cinereus
northern dusky	Esmognathus fuscus
spring	Gyrinophilus porphyriticus
northern toed-lined	Eurycea bislineata
Snake	
northern water	Natrix sipedon
northern brown	Storeria dekayi
red-bellied	S. occipitomaculata
northern ring-necked	Diadophis punctatus
northern smooth green	Opheodrys vernalis
northern black racer	Coluber constrictor
eastern garter	Thamnophis sirtalis
eastern milk	Lampropeltis doliata
Stinkpot	Sternothaerus odoratus
Toad, American	Bufo americanus
Treefrog	
gray	Hyla versicolor
Turtle	
snapping	Chelydra serpentina
stinkpot	Sternothaerus odoratus
spotted turtle	Clemmyis guttata
wood	C. insculpta
eastern painted	Chrysemys picta
Atlantic loggerhead	Caretta caretta
Atlantic leatherback	Dermochelys coriacea
WATERBIRDS, WATERFOWL, AND TERRESTRIAL BIRDS	
Accipiter	
goshawk	Accipiter gentilis
sharp-shinned	A. striatus
cooper's	A. cooperii
Avocet, American	Recurvirostra americana
Albatross	
yellow-nosed	Diomedea chlororhynchos

(continued)

Common name	Scientific name
(Waterbirds, Waterfowl, and Terrestrial Birds continued)	
Alcid	Alcidae
razorbill	*Alca torda*
thick-billed murre	*Uria lomvia*
common murre	*U. aalge*
doverkie	*All alle* (*Palutus alle*)
black guillemot	*Cepphus grylle*
common puffing	*Fratercula corniculata*
Bittern	
least	*Ixobrychus exilis*
American	*Botaurus lentiginosus*
Blackbird	
red-winged	*Agelgius phoeniceus*
rusty	*Euphagus carolinus*
yellow-headed	*Xanthocephalus xanthocephalus*
Bobolink	*Dolichonyx oryzivorus*
Brant	*Branta bernicla*
Bufflehead	*Bucephala albeola*
Bunting	
snow	*Plectrophenax nivalis*
indigo	*Passerina cyanea*
painted	*P. ciris*
lark	*Calamospiza melanocorys*
lazuli	*P. amoena*
Canvasback	*Athya americana*
Cardinal	*Cardinalis cardinalis*
Catbird	
gray	*Dumetella carolinensis*
Chat	
yellow-breasted	*Icteria virens*
Chickadee	
black-capped	*Parus atricapillus*
boreal	*Parus hudsonicus*
Coot	*Fulica americana*
Cormorant	
great	*Phalacrocorax carbo*
doubled-crested	*P. auritus*
Corvid	*Corvidae*
gray jay	*Perisoreus canadensis*
blue jay	*Cyanocitta cristata*
common raven	*Corvus corax*
fish crow	*C. ossifragus*
black-billed magpie	*Pica pica*
Cowbird	
brown headed	*Molothrus ater*
Crane	
sandhill	*Grus canadensis*
Creeper	
brown	*Certhia familiaris*

(continued)

(Waterbirds, Waterfowl, and Terrestrial Birds continued)

Common name	Scientific name
Crossbill	
red	*Loxia curvirostra*
white-winged	*L. leucoptera*
Crow	
common crow	*Corvus brachyrhynchos*
fish crow	*C. ossifragus*
Cuckoo	
black-billed	*Coccyus erythropthalmus*
yellow-billed	*C. americanus*
Curlew	
long-billed	*Numenius americanus*
Dickcissel	*Spiza americana*
Dove	
rock	*Columbia livia*
mourning	*Zenaida macroura*
white-winged dove	*Z. asiatica*
Dovekie	*Alle alle*
Dowitcher	
short-billed	*Limnodromus griseus*
long-billed	*L. scolopaceus*
Duck	
fulvous whistling	*Dendroaygna autumnalis*
mallard	*Anas platyrhynchos*
black	*A. rubripes*
wood	*Aix sponsa*
ruddy	*Oxyura jamaicensis*
harlequin	*Histrionicus histrionicus*
Eagle	
bald	*Haliaeetus leucocephalus*
golden	*Aquila chrysaetos*
Egret	
snowy	*Egretta thula*
great	*Casmerodeus albus*
cattle	*Bubulcus ibis*
Eider	
common	*Somateria mollissima*
king	*S. spectabilis*
Falcon	Falconidae
peregrine	*Falco peregrinus*
gyrfalcon	*F. rusticolus*
merlin	*F. columbarius*
kestrel	*F. sparverius*
Finch	
purple	*Carpodacus purpureus*
horse	*C. mexicanus*
Flicker	
common	*Colaptes auratus*

(continued)

Common name	Scientific name
(Waterbirds, Waterfowl, and Terrestrial birds continued)	
Flycatcher	
great crested	*Myiarchus crinitus*
ash-throated	*M. cinerascens*
yellow-bellied	*Empidonax flaviventris*
willow	*E. traillii*
alder	*E. alnorum*
least	*E. minimus*
acadian	*E. virescens*
olive-sided	*Nuttallornis borealis*
fork-tailed	*Muscivora tyrannus*
cissor-tailed	*M. forficate*
Frigatedbird	
magnificent	*Frequata magnificens*
lesser	*F. ariel*
Fulmar	
northern	*Fulmarus glacialis*
Gadwall	*Anas strepera*
Gallinule	
purple	*Porphyrula martinica*
common	*Gallinula chloropus*
Gannet	*Morus bassansu*
Gnatcatcher	
blue-gray	*Polioptila caerulea*
Godwit	
marbled	*Limosa fedoa*
hudsonian	*L. haemastica*
Goldeneye	
common	*Bucephala clangula*
Barrows	*B. islandica*
Goldfinch	*Carduelis tristis*
Goose	
Canada	*Branta candensis*
snow	*Chen caerulescens*
white-fronted	*Anser albifrons*
Grackle	
common	*Quiscalus quiscula*
Grebe	
red-necked	*Podicips grisegena*
horned	*P. auritus*
eared	*P. niaricollis*
western	*Aechmophous occidentalis*
pied-billed	*Podilymbus podiceps*
Grosbeak	
evening	*Hesperiphona vespertina*
pine	*Pinicola enucleator*
rose-breasted	*Pheucticus ludoviciana*
blue	*Guiraca caerulea*
Grouse	
ruffed	*Bonasa umbellus*
spruce	*Canachites canadensis*

(continued)

Common name	Scientific name
(Waterbirds, Waterfowl, and Terrestrial Birds continued)	
Gullemot	
black	Cepphus grylle
Gull	Larus spp.
glaucous	Larus hyperboreus
iceland	L. glaucoides
great black-backed	L. marinus
lesser black-backed	L. fuscus
herring	L. argentatus
ring-billed	L. delawarensis
black-headed	L. ridibundus
laughing	L. articilla
Bonaparte's	L. philadelphia
little	L. minutus
mew	L. canus
Franklin's	L. pipixcan
ivory	Pagophila eburnea
Sabine's	Xema sabini
Hawk	
marsh	Circus cyaneus
rough-legged	Buteo lagopus
red-tailed	B. jamaicensis
broad-winged	B. platypterus
sharp-shinned	Accipiter striatus
cooper's	A. cooperii
red-shouldered	B. lineatus
swainson's	B. swainsoni
Herons	Ardeiae
great blue	Ardea herodias
green	Butorides striatus
little blue	Florida carulea
lauisiana	Hydranassa tricolor
black-crowned night	Nycticorax nycticorax
yellow-crowned night	N. violacea
Hummingbird	
ruby-throated	Archilochus colubris
Ibis	
glossy	Plegadis falcinellus
Jaeger	
promarine	Stercorarius pomarinus
parastitic	S. parasiticus
long-tailed	S. longicaudus
Jay	
blue	Cyanocitta cristata
gray	Perisoreus canadensis
Junco	
dark-eyed	Junco hyemalis
Kestrel	Falco sparverius
Killdeer	Charadrius vociferus
Kingfisher	
belted	Megaceryle alcyon

(continued)

Common names	Scientific name
(Waterbirds, Waterfowl, and Terrestrial Birds continued)	
Kingbird	
eastern	Tyrannus tyrannus
western	T. verticalis
Kinglet	
golden-crowned	Requlus satrapa
ruby-crowned	R. calendula
Kittiwake	
black-legged	Rissa tridactyla
Knot	
red	Calidris canutus
Laridae	
gulls	
terns	
Lark	
horned	Eremophila alpestis
Longspur	
lapland	Calcarius lapponicus
Smith's	C. pictus
Loons	Gavidae
common	Gavia immer
red-throated	G. stellata
arctic	G. arctica
Magpie	
black-billed	Pica pica
Martin	
purple	Progne subis
Meadowlark	
eastern	Sturnella magna
Merganser	
hooded	Lophodytes cucullatus
common	Mergus merganser
red-breasted	M. serrator
Merlin	Falco columbarius
Mockingbird	Mimus polyglottos
Murre	
common	Uria aalge
thick-billed	U. lomvia
Nighthawk	
common	Chordeiles minor
Nuthatch	
red-breasted	Sittacanadensis
white-breasted	S. carolinensis
Oldsquaw	Clangula hyemalis
Oriole	
northern	Icterus galbula
orchard	I. spurius
Osprey	Pandion haliaetus
Ovenbird	Seiurus aurocapillus

(continued)

Common name	Scientific name
(Waterbirds, Waterfowl, and Terrestrial Birds continued)	
Owls	
great-horned	Bubo virginianus
short-eared	Asio flammeus
long-eared	A. otus
snowy	Nyctea scandiaca
barred	Strix varia
great gray	S. nebulosa
screech	Otus asio
boreal	Aegolius funereus
saw-whet	A. acadicus
hawk	Surnia ulula
barn	Tyto alba
Oystercatcher	Haematopus pallistus
Pelican	
brown	Polecanus occidentalis
white	P. erythrorhynchos
Petrel	
Leach's Storm	Oceanodroma leucorhoa
Wilson's storm	O. oceanicus
Pewee	
easternwood	Contopus virens
Phalorope	
red	Phalaropus fulicarius
wilson's	Steganopus tricolor
northern	Lobipes lobatus
Pheasant	
ring-necked	Phasianus colchicus
Phoebe	
eastern	Sayornis phoebe
say's	S. saya
Pigeon	
rock dove	Columbia livia
Pintail	Anas acuta
Pipit	
water	Anthus spinoletta
Plover	
senipalmated	Charadrius semipalmatus
piping	C. melodus
American golden	Pluvialis dominica
black-bellied	P. squatarola
Ptarmigan	
willow	Lagopus lagopus
Puffin	
common	Fratercula artica

(continued)

Common name	Scientific name
(Waterbirds, Waterfowl, and Terrestrial Birds continued)	
Rails	Rallidae
Virginia	*Rallus limicola*
king	*R. elegans*
clapper	*R. longirostris*
yellow	*Coturnicops noveboracensis*
Raven	
common	*Corvus corax*
Razorbill	*Alca torda*
Redhead	*Athya americana*
Redpoll	
common	*Carduelis flammea*
hoary	*C. hornamanni*
Redshank	
spotted	*Tringa erythropus*
Redstart	
American	*Setophaga ruticilla*
Robin, American	*Thurdus migratorius*
Ruff	*Philomachus pugnax*
Sanderling	*Calidris alba*
Sandpiper	
upland	*Bartramia longicauda*
spotted	*Actitis macularia*
solitary	*Tringa solitaria*
purple	*Calidis maritima*
pectoral	*C. melanotos*
white-rumped	*C. fuscicollis*
bairds	*C. bairdi*
least	*C. minutilla*
sempipalmated	*C. pusilla*
western	*C. mauri*
dulin	*C. alpins*
curlew	*C. ferruginea*
buff-breasted	*Tryngites subruficollis*
stilt	*Micropalama himantopus*
Sapsucker	
yellow-bellied	*Sphyrapicus varius*
Shorebirds	*Scolopacidae*
Scoter	
white-winged	*Melanitta deglandi*
surf	*M. perspicillata*
black	*M. nigra*
Scaup	
greater	*Athya marila*
lesser	*A. affinis*
Shearwater	
greater	*Puffinus*
sooty	*P. griseus*
manx	*P. puffinus*
Cary's	*P. diomedea*

(continued)

Common name	Scientific name
(Waterbirds, Waterfowl, and Terrestrial Birds continued)	
Shoveler	Anas clypeata
Shrike	
northern	Lanius excubitor
loggerheaded	L. ludovicianus
Siskin	
pine	Carduelis pinus
Skimmer, black	Rynchops nigra
Skua, northern	Catharacta skua
Snipe	
common	Capella gallinago
Sparrow	
house	Passer domesticus
savannah	Passerculus sandwichensis
grasshopper	Ammodramus savannarum
sharp-tailed	Ammospiza caudacuta
searide	A. maritima
LeConte'S	A. lecontei
vesper	Pooecetes graminius
lark	Chondestes gramineus
tree	Spizella arborea
chipping	S. passerina
clay-colored	S. pallida
field	S. pusilla
white-crowned	Zonotrichia leucophrys
Harris	Z. querula
white-throated	Z. albicollis
fox	Passerella iliaca
Lincoln's	Melospiza lincolnii
swamp	M. georgiana
song	M. melodia
Starling	
european	Sturnus vulgaris
Stilt	
black-necked	Himantopus mexicanus
Swallow	
tree	Iridoprocne bicolor
bank	Riparia riparia
rough-winged	Stelgidopteryx ruficollis
barn	Hirundo rustica
cliff	Petrochelidon phrrhonota
Swan	
mute	Cygnus olor
whistling	Olor columbanus
Swift	
chimney	Chaetura pelagica
Tanager	
scarlet	Piranga olivacea
western	P. ludoviciana
summer	P. rubra

Common name	Scientific name
(Waterbirds, Waterfowl, and Terrestrial Birds continued)	
Teal	
green-winged	Anas crecca
blue-winged	A. discors
Tern	
common	Sterna hirundo
arctic	S. paradisaea
roseate	S. dougallii
least	S. albifrons
black	Childonias niger
forster's	S. forsteri
sooty	S. fuscata
royal	S. maxima
sandwich	S. sandvicensis
caspian	S. caspia
gull-billed	Gelochelidon nilotica
Thrasher	
brown	Toxostoma fufum
Thrush	
Swaison's	Ctharus ustulatus
hermit	C. guttatus
wood	Hylocichla mustelina
gray-cheeked	C. minimus
varied	Txoreus naevius
Titmouse	
tufted	Parus bicolor
Towhee	
rufous-sided	Pipilo erythrophthalmus
Turnstone	
ruddy	Arenaria interres
Veery	
Vireo	
red-eyed	Vireo olivaceus
warbling	V. gilvus
solitary	V. solitarius
yellow-throated	V. flavifrons
philadelphia	V. philadelphicus
white-eyed	V. griseus
Vulture	
turkey	Cathartes aura
black	Coragyps atratus
Warbler	
black-and-white	Mniotilta varia
tennessee	Vermivora peregrina
Nashville	V. ruficapilla
orange-crowned	V. celata
blue-winged	V. pinus
golden-winged	V. chrysoptera
parula	Parula americana
yellow	Dendroica petechia
magnolia	D. magnolia
cape may	D. tigrian

Common name	Scientific name
(Waterbirds, Waterfowl, and Terrestrial Birds continued)	
Warbler	
black-throated blue	D. caerulescens
yellow-rumped (myrtle)	D. coronata
black-throated green	D. virens
cerulean	D. caerulea
blackburnian	D. fusca
chestnut-sided	D. pensylvanica
bay-breasted	D. castanea
blackpoll	D. striata
pine	D. pinus
prairie	D. discolor
yellow-throated	D. dominica
mouring	Oporornis philadelphia
Connecticut	O. agilis
Canada	Wilsonia canadensis
hooded	W. citrina
prothonotary	Protonotaria citrea
palm	D. palmarum
Wilson's	Wilsonia pusilla
worm-eating	Helmitheros vermivorus
Waterthrush	
northern	Seiurus noveboracensis
Louisiana	S. motacilla
Waxwing	
cedar	Bobycilla cedrorum
bohemian	B. garrulus
Wheatwar	Oenanthe oenanthe
Whimbrel	Numenius phaeopus
Whip-poor-will	Caprimulgus vociferus
Widow	
chuck-will's	Caprimulgus carolinensis
Wigeon	
European	Anas penelope
American	A. americana
Willet	Catoprophorus semipalmatus
Woodcock, American	Philohela minor
Woodpecker	
pileated	Drycocopus pileatus
red-bellied	Melanerpes carolinus
red-headed	M. erythrocephalus
hairy	Picoides villosus
downy	P. pubescens
black-backed three-toed	P. arcticus
northern three-toed	P. tridactylus

(continued)

Common name	Scientific name
(Waterbirds, Waterfowl, and Terrestrial Birds contined)	
Wren	
house	Troglodytes aedon
winter	T. troglodytes
carolina	Thryothorus ludovicianus
long-billed marsh	Cistothorus palustris
short-billed marsh	Cistothorus platensis
Yellowlegs	
greater	Tringa melanoleuca
lesser	T. flavipes
Yellowthroat	
common	Geothlypis trichas

CHAPTER 2

APPENDIX A

NATIONAL WETLAND INVENTORY DATA

Total Wetland Acreage (NWI) in Regions 1 through 6

Wetland type	Acreage
E1AB	1203.3
E1OW	62366.5
E1RB	58.7
E1UB	3062.6
E2AB	2767.4
E2BB	1088.9
E2EM	13795.0
E2EO	499.7
E2EU	406.7
E2FL	41649.7
E2FM	3.5
E2FS	47.4
E2RF	137.5
E2RS	2911.1
E2SS	65.9
L1AB	27.3
L1OW	57109.5
L1UB	29.6
L2AB	208.7
L2BB	6.4
L2EM	---
L2OW	84.9
L2UB	70.8
M1AB	4137.3
M1BB	25.7
M1OW	79476.2
M1UB	26411.1
M2AB	6201.6
M2BB	3602.0
M2FL	28802.9
M2RF	106.7
M2RS	21451.0

Wetland type	Acreage
PAB	57.1
PEM	8982.7
PEO	113.1
PFE	632.7
PFO	106707.6
PFS	13727.6
PFW	142.3
POW	3449.4
PSE	8570.4
PSO	31.5
PSS	47275.9
PUB	52.2
R1BB	1379.6
R1EM	3192.4
R1FL	1465.9
R1OW	7140.1
R1RS	1.2
R1UB	12.1
R2EM	79.0
R2OW	1828.3
R3OW	1038.6
UNKNOWN	2361.4
TOTAL	566130.6

Summary Totals of Wetlands (NWI) in Region 1

Wetland type	Acreage
E1AB	209.0
E1OW	5436.7
E1RB	
E1UB	262.1
E2AB	387.1
E2BB	7.3
E2EM	1921.3
E2EO	286.0
E2EU	9.3
E2FL	5411.3
E2FM	3.5
E2FS	47.4
E2RF	42.1
E2RS	74.3
E2SS	
L1AB	
L1OW	396.1
L1UB	29.6
L2AB	
L2BB	
L2EM	
L2OW	
L2UB	
M1AB	503.4
M1BB	20.8
M1OW	8581.2
M1UB	2609.2
M2AB	3390.0
M2BB	426.4
M2FL	5223.1
M2RF	6.4
M2RS	2213.8
PAB	
PEM	1112.7
PEO	
PFE	19.2
PFO	3260.8
PFS	650.3
PFW	5.4
POW	362.2
PSE	200.5
PSO	2.0
PSS	1458.3
PUB	
R1BB	278.0
R1EM	52.0
R1FL	
R1OW	552.4
R1RS	
R1UB	
R2EM	
R2OW	119.3
R3OW	121.2
UNKNOWN	
TOTAL	45754.4

SUMMARY OF WETLANDS IN BRUNSWICK, REGION 1

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BRUNSWICK	E1OW	00421.4	005
BRUNSWICK	E2EM	00596.4	020
BRUNSWICK	E2FL	780.0	10
BRUNSWICK	M1OW	00058.9	002
BRUNSWICK	M2AB	00518.2	003
BRUNSWICK	M2BB	7.0	2
BRUNSWICK	M2FL	01112.6	010
BRUNSWICK	M2RS	00051.8	007
BRUNSWICK	P EM	00091.3	009
BRUNSWICK	P FO	00235.5	013
BRUNSWICK	P OW	00061.4	007
BRUNSWICK	P SS	00387.5	030
BRUNSWICK	R1BB	278.0	7
BRUNSWICK	R1EM	52.0	2
BRUNSWICK	R1OW	548.0	1
		5200.0	128

SUMMARY OF WETLANDS IN CAPE ELIZABETH, REGION 1

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CAPE ELIZABETH	E1OW	40.2	1
CAPE ELIZABETH	E2BB	6.4	1
CAPE ELIZABETH	E2EM	87.1	5
CAPE ELIZABETH	E2EO	165.6	3
CAPE ELIZABETH	E2EU	9.3	1
CAPE ELIZABETH	E2FL	11.5	1
CAPE ELIZABETH	L1OW	85.8	1
CAPE ELIZABETH	M1AB	64.8	4
CAPE ELIZABETH	M1UB	741.2	8
CAPE ELIZABETH	M2AB	10.0	2
CAPE ELIZABETH	M2BB	116.2	21
CAPE ELIZABETH	M2FL	4.7	2
CAPE ELIZABETH	M2RS	275.1	23
CAPE ELIZABETH	P EM	218.9	24
CAPE ELIZABETH	P EO	27.4	6
CAPE ELIZABETH	P FO	715.6	60
CAPE ELIZABETH	P FS	94.1	8
CAPE ELIZABETH	P FW	5.4	1
CAPE ELIZABETH	P OW	58.4	37
CAPE ELIZABETH	P SE	73.7	3
CAPE ELIZABETH	P SO	2.0	1
CAPE ELIZABETH	P SS	184.2	26
		2997.6	239

SUMMARY OF WETLANDS IN CUMBERLAND, REGION 1

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CUMBERLAND	E2EM	15.1	4
CUMBERLAND	E2FM	3.5	2
CUMBERLAND	L1OW	17.4	1
CUMBERLAND	L1UB	29.6	1
CUMBERLAND	M1AB	8.4	1
CUMBERLAND	M1BB	20.8	1
CUMBERLAND	M1OW	4.0	1
CUMBERLAND	M1UB	251.9	7
CUMBERLAND	M2AB	564.5	18
CUMBERLAND	M2BB	123.2	20
CUMBERLAND	M2FL	347.4	14
CUMBERLAND	M2RF	6.4	1
CUMBERLAND	M2RS	295.8	50
CUMBERLAND	P EM	143.9	16
CUMBERLAND	P FO	303.4	31
CUMBERLAND	P FS	203.0	9
CUMBERLAND	P OW	38.7	18
CUMBERLAND	P SE	20.3	4
CUMBERLAND	P SS	309.6	24
		2706.9	223

SUMMARY OF WETLANDS IN FALMOUTH, REGION 1

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
FALMOUTH	E1OW	98.1	6
FALMOUTH	E2AB	45.8	3
FALMOUTH	E2EM	222.9	9
FALMOUTH	E2FL	423.2	9
FALMOUTH	E2OW	9.3	4
FALMOUTH	E2RS	2.3	1
FALMOUTH	L1OW	260.7	1
FALMOUTH	M2AB	445.7	5
FALMOUTH	M2BB	6.4	2
FALMOUTH	M2FL	411.8	2
FALMOUTH	M2RF	6.8	2
FALMOUTH	M2RS	40.3	13
FALMOUTH	P EM	101.5	18
FALMOUTH	P FO	396.7	53
FALMOUTH	P FS	145.3	9
FALMOUTH	P OW	52.3	26
FALMOUTH	P SE	18.2	2
FALMOUTH	P SS	98.0	18
FALMOUTH	R1OW	4.4	1
FALMOUTH	R2OW	47.8	6
FALMOUTH	R3OW	66.1	4
		2903.6	194

SUMMARY OF WETLANDS IN FREEPORT, REGION 1

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
FREEPORT	E1OW	250.5	3
FREEPORT	E2AB	80.1	4
FREEPORT	E2BB	0.9	1
FREEPORT	E2EM	385.7	29
FREEPORT	E2EO	12.0	1
FREEPORT	E2FL	744.6	4
FREEPORT	E2FS	27.7	2
FREEPORT	E2RS	35.3	5
FREEPORT	M1UB	1183.4	5
FREEPORT	M2AB	571.7	7
FREEPORT	M2BB	10.2	2
FREEPORT	M2FL	991.0	7
FREEPORT	M2RS	120.8	39
FREEPORT	P EM	167.0	14
FREEPORT	P FE	13.8	1
FREEPORT	P FO	455.9	25
FREEPORT	P FS	54.0	3
FREEPORT	P OW	30.3	10
FREEPORT	P SE	17.3	3
FREEPORT	P SS	78.4	15
		5230.6	180

SUMMARY OF WETLANDS IN HARPSWELL, REGION 1

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
HARPSWELL	E1AB	209.0	6
HARPSWELL	E1FL	12.0	1
HARPSWELL	E1OW	3088.0	4
HARPSWELL	E2AB	45.0	3
HARPSWELL	E2EM	00201.9	015
HARPSWELL	E2FL	1552.0	40
HARPSWELL	E2RS	20.0	4
HARPSWELL	L1OW	1.7	1
HARPSWELL	M1AB	00388.0	017
HARPSWELL	M1OW	08094.1	008
HARPSWELL	M1UB	96.6	11
HARPSWELL	M2AB	00661.1	024
HARPSWELL	M2BB	00055.3	013
HARPSWELL	M2FL	01245.8	047
HARPSWELL	M2RS	01019.2	127
HARPSWELL	P EM	40.0	3
HARPSWELL	P FO	00118.1	008
HARPSWELL	P OW	00018.6	003
HARPSWELL	P SS	00089.6	012
HARPSWELL	UNK	38.0	3
		16994.0	350

SUMMARY OF WETLANDS IN PORTLAND, REGION 1

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
PORTLAND	E1OW	811.1	13
PORTLAND	E1UB	133.7	6
PORTLAND	E2AB	125.9	3
PORTLAND	E2EM	207.6	20
PORTLAND	E2FL	1020.5	19
PORTLAND	E2OW	16.3	3
PORTLAND	E2RF	4.8	1
PORTLAND	E2RS	7.2	5
PORTLAND	L1OW	9.6	1
PORTLAND	M1OW	345.8	1
PORTLAND	M1UB	116.0	5
PORTLAND	M2AB	297.3	14
PORTLAND	M2BB	104.0	30
PORTLAND	M2FL	174.9	10
PORTLAND	M2RS	368.5	52
PORTLAND	P EM	92.4	9
PORTLAND	P FE	2.9	1
PORTLAND	P FO	279.6	35
PORTLAND	P FS	36.2	3
PORTLAND	P OW	24.7	14
PORTLAND	P SE	29.3	3
PORTLAND	P SS	156.4	25
PORTLAND	R2OW	7.1	2
PORTLAND	R3OW	55.1	3
		4426.9	278

SUMMARY OF WETLANDS IN SOUTH PORTLAND

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SOUTH PORTLAND	E1OW	278.0	5
SOUTH PORTLAND	E1UB	114.3	3
SOUTH PORTLAND	E2AB	6.0	1
SOUTH PORTLAND	E2EM	38.4	5
SOUTH PORTLAND	E2FL	416.7	12
SOUTH PORTLAND	L1OW	20.9	1
SOUTH PORTLAND	M1OW	78.4	1
SOUTH PORTLAND	M1UB	122.3	1
SOUTH PORTLAND	M2AB	22.0	1
SOUTH PORTLAND	M2BB	4.1	1
SOUTH PORTLAND	M2FL	11.7	1
SOUTH PORTLAND	M2RS	9.2	2
SOUTH PORTLAND	P EM	185.5	11
SOUTH PORTLAND	P FE	2.5	1
SOUTH PORTLAND	P FO	517.0	28
SOUTH PORTLAND	P FS	55.3	5
SOUTH PORTLAND	P OW	40.8	21
SOUTH PORTLAND	P SE	41.7	4
SOUTH PORTLAND	P SS	49.1	10
		2013.9	114

SUMMARY OF WETLANDS IN YARMOUTH, REGION 1

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
YARMOUTH	E1OW	423.8	4
YARMOUTH	E1UB	00014.1	001
YARMOUTH	E2AB	84.3	4
YARMOUTH	E2EM	166.2	12
YARMOUTH	E2EO	108.4	5
YARMOUTH	E2FL	462.8	2
YARMOUTH	E2FS	19.7	1
YARMOUTH	E2RF	37.3	1
YARMOUTH	E2RS	9.5	1
YARMOUTH	M1AB	42.7	3
YARMOUTH	M1UB	97.8	3
YARMOUTH	M2AB	300.0	9
YARMOUTH	M2FL	923.2	11
YARMOUTH	M2RS	33.1	8
YARMOUTH	P EM	72.2	3
YARMOUTH	P FO	239.0	9
YARMOUTH	P FS	62.4	5
YARMOUTH	P OW	37.0	11
YARMOUTH	P SS	157.1	10
YARMOUTH	R2OW	64.4	1
		3355.0	104

Summary Totals of Wetlands (NWI) in Region 2

Wetland type	Acreage	Wetland type	Acreage
E1AB	718.0	PAB	
E1OW	17992.7	PEM	1937.7
E1RB		PEO	6.8
E1UB		PFE	3.2
E2AB	162.7	PFO	10320.7
E2BB		PFS	1940.8
E2EM	4975.1	PFW	40.6
E2EO		POW	560.6
E2EU		PSE	1480.9
E2FL	9432.4	PSO	
E2FM		PSS	7883.6
E2FS		PUB	
E2RF			
E2RS	129.8	R1BB	1101.6
E2SS	8.0	R1EM	3132.9
		R1FL	1211.1
L1AB		R1OW	5682.4
L1OW	4199.2	R1RS	
L1UB		R1UB	12.1
L2AB		R2EM	
L2BB		R2OW	353.4
L2EM		R3OW	138.3
L2OW			
L2UB		UNKNOWN	
M1AB	538.0		
M1BB			
M1OW	1785.0		
M1UB			
M2AB			
M2BB	562.0		
M2FL	168.0		
M2RF			
M2RS	810.0	TOTAL	77380.9

SUMMARY OF WETLANDS IN ALNA, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ALNA	E1OW	00126.4	003
ALNA	E2AB	1.6	1
ALNA	E2EM	40.1	5
ALNA	E2FL	29.6	4
ALNA	L1OW	00081.9	005
ALNA	P EM	00174.9	013
ALNA	P FO	00494.1	033
ALNA	P FS	00145.1	015
ALNA	P OW	00022.6	019
ALNA	P SE	00037.4	008
ALNA	P SS	00151.5	034
ALNA	R1OW	00053.7	002
ALNA	R3OW	42.1	2
		1401.0	144

SUMMARY OF WETLANDS IN ARROWSIC, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ARROWSIC	E1OW	1084.0	3
ARROWSIC	E2EM	726.0	16
ARROWSIC	E2FL	752.0	13
ARROWSIC	L1OW	48.0	1
ARROWSIC	P EM	11.0	2
ARROWSIC	P FO	53.0	4
ARROWSIC	P SS	19.0	3
		2693.0	42

SUMMARY OF WETLANDS IN AUGUSTA, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
AUGUSTA	L1OW	1456.3	12
AUGUSTA	P EM	122.5	20
AUGUSTA	P EO	4.7	1
AUGUSTA	P FE	3.2	1
AUGUSTA	P FO	2069.8	115
AUGUSTA	P FS	166.3	18
AUGUSTA	P OW	59.3	30
AUGUSTA	P SE	730.0	30
AUGUSTA	P SS	589.3	60
AUGUSTA	R1BB	3.0	1
AUGUSTA	R1FL	6.3	4
AUGUSTA	R1OW	62.2	2
AUGUSTA	R2OW	330.4	4
AUGUSTA	UNK	93.3	1
		5696.6	299

SUMMARY OF WETLANDS IN BATH, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BATH	E1OW	1368.0	5
BATH	E2EM	00300.0	012
BATH	E2FL	73.0	4
BATH	L1OW	64.0	1
BATH	P EM	43.0	3
BATH	P FO	2.0	1
BATH	P OW	12.0	2
BATH	P SS	158.0	12
BATH	R1BB	377.0	6
BATH	R1EM	172.0	2
BATH	R1FL	73.0	2
BATH	R1OW	380.0	1
		3022.0	51

SUMMARY OF WETLANDS IN BOOTHBAY, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BOOTHBAY	E1AB	98.0	1
BOOTHBAY	E1OW	116.0	6
BOOTHBAY	E2EM	55.0	9
BOOTHBAY	E2FL	1158.0	31
BOOTHBAY	E2RS	20.0	6
BOOTHBAY	L1OW	200.0	4
BOOTHBAY	M2BB	2.0	1
BOOTHBAY	M2FL	30.0	3
BOOTHBAY	M2RS	179.0	18
BOOTHBAY	P EM	72.0	8
BOOTHBAY	P FO	161.0	28
BOOTHBAY	P OW	19.0	11
BOOTHBAY	P SS	170.0	21
		2280.0	147

SUMMARY OF WETLANDS IN BOOTHBAY HARBOR, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BOOTHBAY HARBOR	E1AB	153.0	2
BOOTHBAY HARBOR	E2FL	11.0	1
BOOTHBAY HARBOR	E2RS	14.0	3
BOOTHBAY HARBOR	L1OW	93.0	3
BOOTHBAY HARBOR	M1AB	14.0	1
BOOTHBAY HARBOR	M1OW	7.0	2
BOOTHBAY HARBOR	M2FL	9.0	3
BOOTHBAY HARBOR	M2RS	8.0	4
BOOTHBAY HARBOR	P EM	15.0	3
BOOTHBAY HARBOR	P FO	30.0	4
BOOTHBAY HARBOR	P OW	7.0	7
BOOTHBAY HARBOR	P SS	67.0	5
		428.0	38

SUMMARY OF WETLANDS IN BOWDOINHAM, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BOWDOINHAM	E1OW	170.0	4
BOWDOINHAM	E2FL	82.0	1
BOWDOINHAM	P EM	00086.4	010
BOWDOINHAM	P FO	00785.2	072
BOWDOINHAM	P FS	00272.8	022
BOWDOINHAM	P OW	00021.6	016
BOWDOINHAM	P SE	117.8	4
BOWDOINHAM	P SS	00742.3	066
BOWDOINHAM	R1BB	51.0	1
BOWDOINHAM	R1EM	01757.5	015
BOWDOINHAM	R1FL	00117.2	007
BOWDOINHAM	R1OW	00974.3	014
		5178.1	232

SUMMARY OF WETLANDS IN CHELSEA, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CHELSEA	L1OW	25.3	1
CHELSEA	P EM	117.2	7
CHELSEA	P FO	1088.6	53
CHELSEA	P FS	61.7	11
CHELSEA	P FW	2.4	1
CHELSEA	P OW	13.2	9
CHELSEA	P SE	63.6	3
CHELSEA	P SS	287.3	31
CHELSEA	R1BB	10.4	1
CHELSEA	R1FL	54.4	5
CHELSEA	R1OW	271.9	3
		1996.0	125

SUMMARY OF WETLANDS IN DRESDEN, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
DRESDEN	L1OW	355.1	1
DRESDEN	P EM	00045.7	016
DRESDEN	P FO	01027.7	085
DRESDEN	P FS	00171.7	016
DRESDEN	P OW	00035.1	026
DRESDEN	P SE	00072.1	009
DRESDEN	P SS	00510.2	070
DRESDEN	R1BB	3.4	1
DRESDEN	R1EM	00552.1	009
DRESDEN	R1FL	00349.8	031
DRESDEN	R1OW	00953.5	009
		4076.4	273

SUMMARY OF WETLANDS IN EDGECOMB, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
EDGECOMB	E2EM	00043.7	008
EDGECOMB	E2FL	00399.8	016
EDGECOMB	E2RS	8.8	3
EDGECOMB	L1OW	75.0	2
EDGECOMB	P EM	13.0	2
EDGECOMB	P FO	00118.6	016
EDGECOMB	P OW	00023.5	014
EDGECOMB	P SS	00173.8	028
		856.2	89

SUMMARY OF WETLANDS IN FARMINGDALE, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
FARMINGDALE	L1OW	67.9	2
FARMINGDALE	P EM	7.5	3
FARMINGDALE	P FO	255.6	33
FARMINGDALE	P FS	131.3	11
FARMINGDALE	P OW	7.5	6
FARMINGDALE	P SE	39.8	5
FARMINGDALE	P SS	186.1	20
FARMINGDALE	R1FL	1.4	1
FARMINGDALE	R1OW	145.2	2
		842.3	83

SUMMARY OF WETLANDS IN GARDINER, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
GARDINER	L1OW	110.0	2
GARDINER	P EM	28.5	6
GARDINER	P FO	317.2	44
GARDINER	P FS	58.4	4
GARDINER	P OW	23.2	8
GARDINER	P SE	4.3	1
GARDINER	P SS	102.8	24
GARDINER	R1OW	412.2	3
GARDINER	R3OW	96.2	1
		1152.8	93

SUMMARY OF WETLANDS IN GEORGETOWN, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
GEORGETOWN	E1AB	192.0	1
GEORGETOWN	E1OW	2399.0	4
GEORGETOWN	E2EM	1144.0	21
GEORGETOWN	E2FL	1370.0	35
GEORGETOWN	E2RS	15.0	7
GEORGETOWN	L1OW	14.0	1
GEORGETOWN	M1AB	309.0	13
GEORGETOWN	M1OW	150.0	1
GEORGETOWN	M2BB	44.0	4
GEORGETOWN	M2FL	7.0	2
GEORGETOWN	M2RS	266.0	18
GEORGETOWN	P EM	90.0	6
GEORGETOWN	P FO	38.0	3
GEORGETOWN	P OW	27.0	5
GEORGETOWN	P SS	110.0	13
		6175.0	134

SUMMARY OF WETLANDS IN HALLOWELL, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
HALLOWELL	L1OW	6.1	2
HALLOWELL	P EM	11.5	2
HALLOWELL	P FO	96.4	8
HALLOWELL	P FS	26.9	3
HALLOWELL	P OW	18.8	7
HALLOWELL	P SE	5.5	1
HALLOWELL	P SS	2.2	1
HALLOWELL	R1BB	6.3	2
HALLOWELL	R1FL	5.9	1
HALLOWELL	R1UB	12.1	1
		191.7	28

SUMMARY OF WETLANDS IN NEWCASTLE, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
NEWCASTLE	E1OW	730.8	6
NEWCASTLE	E2AB	91.8	8
NEWCASTLE	E2EM	00545.4	047
NEWCASTLE	E2FL	943.9	20
NEWCASTLE	L1OW	00218.6	005
NEWCASTLE	P EM	198.6	42
NEWCASTLE	P FO	00550.5	064
NEWCASTLE	P FS	173.1	24
NEWCASTLE	P OW	00020.0	013
NEWCASTLE	P SE	52.1	10
NEWCASTLE	P SS	00384.3	060
		3909.1	299

SUMMARY OF WETLANDS IN PITTSTON, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
PITTSTON	L1OW	207.6	3
PITTSTON	P EM	50.5	13
PITTSTON	P FO	752.2	80
PITTSTON	P FS	114.9	14
PITTSTON	P FW	38.2	1
PITTSTON	P OW	61.8	22
PITTSTON	P SE	239.1	11
PITTSTON	P SS	314.2	63
PITTSTON	R1BB	81.2	1
PITTSTON	R1EM	10.0	5
PITTSTON	R1FL	94.5	10
PITTSTON	R1OW	466.8	3
		2431.0	226

SUMMARY OF WETLANDS IN PHIPPSBURG, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
PHIPPSBURG	E1OW	2314.0	7
PHIPPSBURG	E2EM	1096.0	27
PHIPPSBURG	E2FL	1373.0	20
PHIPPSBURG	E2RS	8.0	3
PHIPPSBURG	E2SS	8.0	1
PHIPPSBURG	L1OW	49.0	3
PHIPPSBURG	M1AB	215.0	10
PHIPPSBURG	M1OW	1628.0	2
PHIPPSBURG	M2BB	516.0	8
PHIPPSBURG	M2FL	84.0	6
PHIPPSBURG	M2RS	214.0	21
PHIPPSBURG	P EM	247.0	13
PHIPPSBURG	P FO	383.0	30
PHIPPSBURG	P OW	48.0	11
PHIPPSBURG	P SS	00344.0	040
		8527.0	202

SUMMARY OF WETLANDS IN RANDOLPH, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
RANDOLPH	P FS	38.1	1
RANDOLPH	P OW	0.8	1
RANDOLPH	P SS	37.8	5
RANDOLPH	R1FL	21.8	3
RANDOLPH	R1OW	57.2	1
		155.7	11

SUMMARY OF WETLANDS IN SOUTHPORT, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SOUTHPORT	E1OW	2030.0	1
SOUTHPORT	E2EM	2.0	1
SOUTHPORT	E2FL	21.0	4
SOUTHPORT	E2RS	21.0	7
SOUTHPORT	L1OW	9.0	1
SOUTHPORT	M2FL	68.0	12
SOUTHPORT	M2RS	143.0	23
SOUTHPORT	P FO	73.0	5
SOUTHPORT	P OW	3.0	2
SOUTHPORT	P SS	44.0	3
		2414.0	59

SUMMARY OF WETLANDS IN SWAN ISLAND (PERKINS TWP.), REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SWAN ISLAND	P EM	7.6	2
SWAN ISLAND	P FO	24.4	5
SWAN ISLAND	P OW	8.1	6
SWAN ISLAND	P SS	52.4	6
SWAN ISLAND	R1EM	144.7	8
SWAN ISLAND	R1FL	296.3	5
SWAN ISLAND	R1OW	412.9	2
		946.4	34

SUMMARY OF WETLANDS IN TOPSHAM, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
TOPSHAM	L1OW	34.0	1
TOPSHAM	P EM	179.0	10
TOPSHAM	P FO	154.0	7
TOPSHAM	P OW	4.0	1
TOPSHAM	P SS	1715.0	38
TOPSHAM	R1BB	497.0	8
TOPSHAM	R1EM	403.0	6
TOPSHAM	R1FL	132.0	3
TOPSHAM	R1OW	880.0	1
		3998.0	75

SUMMARY OF WETLANDS IN WEST BATH, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
WEST BATH	E1OW	1326.0	2
WEST BATH	E2EM	38.0	4
WEST BATH	E2FL	685.0	12
WEST BATH	E2RS	14.0	1
WEST BATH	L1OW	55.4	2
WEST BATH	P EM	59.0	4
WEST BATH	P FO	32.0	3
WEST BATH	P OW	33.0	2
WEST BATH	P SS	267.0	18
		2509.4	48

SUMMARY OF WETLANDS IN WESTPORT, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
WESTPORT	E1AB	275.0	1
WESTPORT	E1OW	328.0	2
WESTPORT	E2EM	61.0	5
WESTPORT	E2FL	541.0	22
WESTPORT	E2RS	13.0	3
WESTPORT	P EM	19.0	4
WESTPORT	P FO	64.0	9
WESTPORT	P OW	18.0	5
WESTPORT	P SS	64.0	7
		1383.0	58

SUMMARY OF WETLANDS IN WISCASSET, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
WISCASSET	E1OW	04328.7	003
WISCASSET	E2AB	30.8	2
WISCASSET	E2EM	00240.9	029
WISCASSET	E2FL	00784.1	015
WISCASSET	E2RS	00012.0	009
WISCASSET	L1OW	00101.5	003
WISCASSET	P EM	00033.7	011
WISCASSET	P EO	2.1	1
WISCASSET	P FO	00488.3	040
WISCASSET	P FS	114.0	15
WISCASSET	P OW	00041.6	030
WISCASSET	P SE	41.9	11
WISCASSET	P SS	00177.0	028
		6396.6	197

SUMMARY OF WETLANDS IN WOOLWICH, REGION 2

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
WOOLWICH	E1OW	1749.0	4
WOOLWICH	E2EM	683.0	27
WOOLWICH	E2FL	1209.0	18
WOOLWICH	E2RS	4.0	2
WOOLWICH	L1OW	432.0	2
WOOLWICH	P EM	00178.7	020
WOOLWICH	P FO	00458.9	043
WOOLWICH	P FS	11.0	3
WOOLWICH	P OW	00056.4	018
WOOLWICH	P SS	00578.1	059
WOOLWICH	R1BB	72.3	1
WOOLWICH	R1EM	93.6	2
WOOLWICH	R1OW	00226.8	002
WOOLWICH	R2OW	23.0	1
		5775.8	202

Summary Totals of Wetlands (NWI) in Region 3

Wetland type	Acreage
E1AB	137.8
E1OW	10244.1
E1RB	
E1UB	
E2AB	325.8
E2BB	7.0
E2EM	1083.9
E2EO	190.3
E2EU	
E2FL	5840.9
E2FM	
E2FS	
E2RF	74.3
E2RS	214.4
E2SS	
L1AB	
L1OW	7218.7
L1UB	
L2AB	
L2BB	
L2EM	
L2OW	
L2UB	
M1AB	845.7
M1BB	
M1OW	142.7
M1UB	
M2AB	278.9
M2BB	20.0
M2FL	1418.9
M2RF	
M2RS	1723.8

Wetland type	Acreage
PAB	
PEM	891.4
PEO	
PFE	
PFO	11320.1
PFS	1669.5
PFW	
POW	418.1
PSE	613.9
PSO	
PSS	4435.5
PUB	
R1BB	
R1EM	
R1FL	
R1OW	
R1RS	
R1UB	
R2EM	
R2OW	163.4
R3OW	17.1
UNKNOWN	
TOTAL	49312.4

SUMMARY OF WETLANDS IN BRISTOL, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BRISTOL	E1OW	172.0	1
BRISTOL	E2BB	7.0	1
BRISTOL	E2EM	8.0	1
BRISTOL	E2FL	274.0	5
BRISTOL	L1OW	227.0	5
BRISTOL	M1AB	68.0	6
BRISTOL	M1OW	18.0	1
BRISTOL	M2BB	8.0	2
BRISTOL	M2FL	157.0	10
BRISTOL	M2RS	312.0	32
BRISTOL	P EM	177.8	16
BRISTOL	P FO	00377.4	040
BRISTOL	P OW	66.5	22
BRISTOL	P SS	00527.1	045
BRISTOL	R2OW	15.0	1
		2414.8	188

SUMMARY OF WETLANDS IN BREMEN, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BREMEN	E1AB	00117.8	006
BREMEN	E1OW	584.0	3
BREMEN	E2AB	00020.2	004
BREMEN	E2EM	00039.4	006
BREMEN	E2FL	00554.3	020
BREMEN	E2RF	00008.0	002
BREMEN	E2RS	00078.3	013
BREMEN	L1OW	343.0	2
BREMEN	M2FL	25.0	4
BREMEN	M2RS	91.0	11
BREMEN	P EM	9.6	1
BREMEN	P FO	00605.2	036
BREMEN	P FS	26.5	2
BREMEN	P OW	00003.2	003
BREMEN	P SE	6.0	1
BREMEN	P SS	00138.6	030
		2650.1	144

SUMMARY OF WETLANDS IN CUSHING, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CUSHING	E1AB	12.0	3
CUSHING	E1OW	02085.7	004
CUSHING	E2EM	7.8	3
CUSHING	E2FL	00931.1	023
CUSHING	E2RF	8.5	2
CUSHING	E2RS	00039.1	008
CUSHING	L1OW	20.2	1
CUSHING	M1AB	109.0	5
CUSHING	M2FL	107.0	7
CUSHING	M2RS	13.0	1
CUSHING	P EM	00030.3	006
CUSHING	P FO	00758.4	047
CUSHING	P FS	76.4	15
CUSHING	P OW	27.4	16
CUSHING	P SE	10.7	3
CUSHING	P SS	00287.5	041
		4524.1	185

SUMMARY OF WETLANDS IN DAMARISCOTTA, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
DAMARISCOTTA	E1OW	49.7	2
DAMARISCOTTA	E2AB	52.1	1
DAMARISCOTTA	E2EM	30.6	5
DAMARISCOTTA	E2FL	232.3	5
DAMARISCOTTA	L1OW	247.6	2
DAMARISCOTTA	P EM	29.6	10
DAMARISCOTTA	P FO	755.8	53
DAMARISCOTTA	P FS	26.4	5
DAMARISCOTTA	P OW	27.1	10
DAMARISCOTTA	P SE	5.0	1
DAMARISCOTTA	P SS	390.6	24
		1846.8	118

SUMMARY OF WETLANDS IN FRIENDSHIP, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
FRIENDSHIP	E1AB	8.0	2
FRIENDSHIP	E1OW	00723.3	003
FRIENDSHIP	E2EM	00045.4	007
FRIENDSHIP	E2FL	00359.4	009
FRIENDSHIP	E2RS	5.0	1
FRIENDSHIP	L1OW	20.0	1
FRIENDSHIP	M1AB	408.0	15
FRIENDSHIP	M2FL	286.0	16
FRIENDSHIP	M2RS	294.0	22
FRIENDSHIP	P EM	00010.4	003
FRIENDSHIP	P FO	00373.2	028
FRIENDSHIP	P FS	132.6	9
FRIENDSHIP	P OW	00016.6	006
FRIENDSHIP	P SE	4.0	1
FRIENDSHIP	P SS	00171.9	022
		2857.8	145

SUMMARY OF WETLANDS IN METINIC ISLAND, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
METINIC ISLAND	M2RS	136.0	7
METINIC ISLAND	P FO	8.0	1
METINIC ISLAND	P OW	2.0	1
METINIC ISLAND	P SS	22.0	3
		168.0	12

SUMMARY OF WETLANDS IN MONHEGAN

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
MONHEGAN	E2EM	4.0	1
MONHEGAN	M2AB	6.0	1
MONHEGAN	M2RS	22.0	8
MONHEGAN	P FO	2.0	1
MONHEGAN	P OW	1.0	1
MONHEGAN	P SS	7.0	2
		42.0	14

SUMMARY OF WETLANDS IN NOBLEBORO, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
NOBLEBORO	E2AB	56.0	2
NOBLEBORO	E2EM	34.9	5
NOBLEBORO	E2FL	35.7	3
NOBLEBORO	L1OW	04283.1	011
NOBLEBORO	P EM	32.8	9
NOBLEBORO	P FO	1166.9	85
NOBLEBORO	P FS	35.4	7
NOBLEBORO	P OW	24.9	16
NOBLEBORO	P SE	210.3	9
NOBLEBORO	P SS	218.7	34
		6098.7	181

SUMMARY OF WETLANDS IN SOUTH BRISTOL, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SOUTH BRISTOL	E1OW	3517.0	4
SOUTH BRISTOL	E2EM	15.0	3
SOUTH BRISTOL	E2FL	543.0	32
SOUTH BRISTOL	E2RS	4.0	2
SOUTH BRISTOL	M1AB	31.0	4
SOUTH BRISTOL	M2FL	35.0	5
SOUTH BRISTOL	M2RS	102.0	10
SOUTH BRISTOL	P FO	46.0	4
SOUTH BRISTOL	P OW	20.0	17
SOUTH BRISTOL	P SS	97.0	11
		4410.0	92

SUMMARY OF WETLANDS IN SOUTH THOMASTON, REGION 3

SATURDAY 18 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SOUTH THOMASTON	E1OW	00180.3	004
SOUTH THOMASTON	E2AB	11.2	3
SOUTH THOMASTON	E2EM	00058.7	008
SOUTH THOMASTON	E2EO	00190.3	001
SOUTH THOMASTON	E2FL	01058.7	009
SOUTH THOMASTON	E2RF	00029.9	004
SOUTH THOMASTON	E2RS	00000.5	001
SOUTH THOMASTON	M1AB	00029.7	003
SOUTH THOMASTON	M1OW	00031.5	001
SOUTH THOMASTON	M2AB	00234.1	007
SOUTH THOMASTON	M2BB	00006.0	002
SOUTH THOMASTON	M2FL	00064.5	006
SOUTH THOMASTON	M2RS	00037.6	009
SOUTH THOMASTON	P EM	00047.4	008
SOUTH THOMASTON	P FO	00270.5	032
SOUTH THOMASTON	P FS	00279.2	029
SOUTH THOMASTON	P OW	00008.6	010
SOUTH THOMASTON	P SE	00001.3	001
SOUTH THOMASTON	P SS	00160.2	025
		2700.2	163

SUMMARY OF WETLANDS IN ST. GEORGE, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ST. GEORGE	E1OW	01329.1	004
ST. GEORGE	E2EM	00463.0	008
ST. GEORGE	E2FL	00672.8	018
ST. GEORGE	E2RF	27.2	5
ST. GEORGE	E2RS	00081.8	006
ST. GEORGE	M1AB	200.0	13
ST. GEORGE	M1OW	93.2	1
ST. GEORGE	M2AB	38.9	2
ST. GEORGE	M2BB	6.0	2
ST. GEORGE	M2FL	00744.4	034
ST. GEORGE	M2RS	00716.2	080
ST. GEORGE	P EM	00025.7	005
ST. GEORGE	P FO	00519.2	054
ST. GEORGE	P FS	171.5	20
ST. GEORGE	P OW	00056.7	019
ST. GEORGE	P SE	2.8	1
ST. GEORGE	P SS	00254.4	038
		5402.9	310

SUMMARY OF WETLANDS IN THOMASTON, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
THOMASTON	E1OW	185.5	2
THOMASTON	E2EM	64.4	10
THOMASTON	E2FL	137.9	3
THOMASTON	P EM	35.5	9
THOMASTON	P FO	177.8	24
THOMASTON	P FS	208.4	23
THOMASTON	P OW	66.6	21
THOMASTON	P SE	39.0	3
THOMASTON	P SS	160.6	25
		1075.7	120

SUMMARY OF WETLANDS IN WALDOBORO, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
WALDOBORO	E1OW	1286.4	5
WALDOBORO	E2AB	186.3	5
WALDOBORO	E2EM	164.4	29
WALDOBORO	E2FL	1042.0	28
WALDOBORO	E2RF	0.7	1
WALDOBORO	E2RS	5.7	2
WALDOBORO	L1OW	679.1	10
WALDOBORO	P EM	335.2	22
WALDOBORO	P FO	5073.6	257
WALDOBORO	P FS	407.4	37
WALDOBORO	P OW	54.0	35
WALDOBORO	P SE	289.7	9
WALDOBORO	P SS	1333.7	139
WALDOBORO	R2OW	4.7	2
WALDOBORO	R3OW	3.3	1
WALDOBORO	UNK	16.2	2
		10882.4	584

SUMMARY OF WETLANDS IN WARREN, REGION 3

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
WARREN	E1OW	131.1	2
WARREN	E2EM	148.3	16
WARREN	L1OW	1124.6	7
WARREN	P EM	157.1	22
WARREN	P FO	1186.1	106
WARREN	P FS	305.7	31
WARREN	P OW	64.5	40
WARREN	P SE	45.1	7
WARREN	P SS	919.3	99
WARREN	R2OW	143.7	2
WARREN	R3OW	13.8	2
		4239.3	334

Summary Totals of Wetlands (NWI) in Region 4

Wetland type	Acreage
E1AB	134.8
E1OW	10446.1
E1RB	
E1UB	128.1
E2AB	721.4
E2BB	648.1
E2EM	980.4
E2EO	
E2EU	
E2FL	6020.9
E2FM	
E2FS	
E2RF	
E2RS	609.7
E2SS	
L1AB	
L1OW	12868.2
L1UB	
L2AB	26.1
L2BB	5.8
L2EM	
L2OW	
L2UB	
M1AB	1486.4
M1BB	4.9
M1OW	38676.0
M1UB	
M2AB	854.7
M2BB	925.8
M2FL	6292.7
M2RF	
M2RS	7914.0

Wetland type	Acreage
PAB	11.9
PEM	1719.0
PEO	13.1
PFE	141.1
PFO	22767.5
PFS	4013.0
PFW	38.8
POW	1013.3
PSE	2360.3
PSO	8.2
PSS	8165.1
PUB	52.2
R1BB	
R1EM	
R1FL	61.6
R1OW	808.4
R1RS	1.2
R1UB	
R2EM	
R2OW	175.3
R3OW	224.6
UNKNOWN	111.9
TOTAL	130330.6

SUMMARY OF WETLANDS IN BANGOR, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BANGOR	L1OW	60.0	1
BANGOR	P EM	37.2	9
BANGOR	P FO	00261.9	025
BANGOR	P FS	00392.5	030
BANGOR	P OW	00155.0	025
BANGOR	P SE	00270.8	018
BANGOR	P SS	00323.9	041
BANGOR	R1FL	00012.5	002
BANGOR	R1OW	128.0	1
BANGOR	R3OW	35.8	1
		1677.6	153

SUMMARY OF WETLANDS IN BELFAST, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BELFAST	E1OW	99.3	5
BELFAST	E2AB	7.9	3
BELFAST	E2FL	204.8	5
BELFAST	L1OW	133.5	5
BELFAST	P EM	124.5	21
BELFAST	P FO	1061.6	56
BELFAST	P FS	354.7	45
BELFAST	P OW	20.4	17
BELFAST	P SE	44.6	6
BELFAST	P SO	4.0	1
BELFAST	P SS	260.6	51
BELFAST	R2OW	15.0	1
		2330.9	216

SUMMARY OF WETLANDS IN BLUE HILL, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BLUE HILL	E1AB	41.3	3
BLUE HILL	E1OW	411.8	2
BLUE HILL	E2AB	91.2	3
BLUE HILL	E2EM	5.2	2
BLUE HILL	E2FL	236.7	10
BLUE HILL	E2RS	3.1	1
BLUE HILL	L1OW	792.6	4
BLUE HILL	M1AB	75.5	1
BLUE HILL	M1OW	4753.4	3
BLUE HILL	M2AB	6.9	2
BLUE HILL	M2FL	85.5	8
BLUE HILL	M2RS	00261.3	018
BLUE HILL	P EM	391.2	25
BLUE HILL	P FO	2861.8	85
BLUE HILL	P OW	53.4	5
BLUE HILL	P SS	831.2	51
		10902.1	223

SUMMARY OF WETLANDS IN BREWER, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BREWER	L1OW	55.4	1
BREWER	P EM	34.5	7
BREWER	P FO	00422.1	020
BREWER	P FS	00037.9	003
BREWER	P OW	00008.3	007
BREWER	P SE	00129.1	009
BREWER	P SS	00147.9	018
BREWER	R1FL	00042.7	011
BREWER	R1OW	158.4	1
BREWER	R3OW	69.3	1
		1105.6	78

SUMMARY OF WETLANDS IN BROOKLIN, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BROOKLIN	E1OW	35.9	1
BROOKLIN	E2BB	1.6	1
BROOKLIN	E2EM	12.7	1
BROOKLIN	E2FL	94.7	3
BROOKLIN	E2RS	30.7	5
BROOKLIN	M1OW	1.9	1
BROOKLIN	M2BB	35.8	3
BROOKLIN	M2FL	184.2	14
BROOKLIN	M2RS	772.1	43
BROOKLIN	P EM	15.0	1
BROOKLIN	P FO	273.9	10
BROOKLIN	P SS	139.1	8
		1597.6	91

SUMMARY OF WETLANDS IN BROOKSVILLE, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BROOKSVILLE	E1AB	48.2	1
BROOKSVILLE	E1OW	194.2	4
BROOKSVILLE	E2AB	156.2	6
BROOKSVILLE	E2EM	112.7	13
BROOKSVILLE	E2FL	927.9	26
BROOKSVILLE	E2RS	70.5	27
BROOKSVILLE	L1OW	732.7	2
BROOKSVILLE	M1OW	25.5	1
BROOKSVILLE	M2AB	17.4	4
BROOKSVILLE	M2BB	26.1	13
BROOKSVILLE	M2FL	199.6	21
BROOKSVILLE	M2RS	289.8	48
BROOKSVILLE	P AB	11.9	1
BROOKSVILLE	P EM	122.1	7
BROOKSVILLE	P FO	01758.0	047
BROOKSVILLE	P OW	26.1	3
BROOKSVILLE	P SS	471.8	28
		5190.7	252

SUMMARY OF WETLANDS IN BUCKSPORT, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BUCKSPORT	E1OW	380.5	1
BUCKSPORT	E1UB	34.0	3
BUCKSPORT	E2BB	00510.2	004
BUCKSPORT	E2EM	00037.9	006
BUCKSPORT	E2FL	00287.0	011
BUCKSPORT	E2RS	2.5	1
BUCKSPORT	L1OW	01454.8	011
BUCKSPORT	L2AB	00026.1	008
BUCKSPORT	P EM	00028.9	011
BUCKSPORT	P EO	10.5	1
BUCKSPORT	P FE	00035.6	004
BUCKSPORT	P FO	00868.7	060
BUCKSPORT	P FS	00504.4	021
BUCKSPORT	P OW	00050.7	018
BUCKSPORT	P SE	00298.3	026
BUCKSPORT	P SS	00527.5	063
BUCKSPORT	R2OW	00059.5	002
		5117.1	251

SUMMARY OF WETLANDS IN CAMDEN, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CAMDEN	L1OW	00838.2	013
CAMDEN	M2BB	20.1	6
CAMDEN	M2FL	35.7	2
CAMDEN	M2RS	24.0	7
CAMDEN	P EM	00025.5	005
CAMDEN	P FO	00170.3	029
CAMDEN	P FS	29.7	7
CAMDEN	P OW	00010.4	011
CAMDEN	P SE	9.4	1
CAMDEN	P SS	00036.9	010
		1200.2	91

SUMMARY OF WETLANDS IN CASTINE, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CASTINE	E1OW	13.7	2
CASTINE	E2BB	14.1	4
CASTINE	E2EM	21.8	4
CASTINE	E2FL	187.7	4
CASTINE	E2RS	27.3	6
CASTINE	M1OW	5366.6	3
CASTINE	M2AB	2.7	1
CASTINE	M2BB	57.4	9
CASTINE	M2EM	2.3	1
CASTINE	M2FL	140.7	10
CASTINE	M2RS	143.7	22
CASTINE	P EM	28.3	3
CASTINE	P FO	634.6	16
CASTINE	P OW	2.2	2
CASTINE	P SS	123.6	9
		6766.7	96

SUMMARY OF WETLANDS IN DEER ISLE, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
DEER ISLE	E2EM	37.8	6
DEER ISLE	E2FL	3.1	1
DEER ISLE	L1OW	56.4	2
DEER ISLE	M1AB	4.8	1
DEER ISLE	M1BB	3.9	1
DEER ISLE	M2BB	198.7	35
DEER ISLE	M2FL	1375.3	46
DEER ISLE	M2RS	1807.4	146
DEER ISLE	P EM	31.2	4
DEER ISLE	P FO	836.6	48
DEER ISLE	P OW	1.1	1
DEER ISLE	P SS	220.9	20
		4577.2	311

SUMMARY OF WETLANDS IN FRANKFORT, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
FRANKFORT	E1UB	11.2	1
FRANKFORT	E2EM	114.7	8
FRANKFORT	E2FL	216.6	5
FRANKFORT	E2RS	0.9	1
FRANKFORT	L1OW	91.9	3
FRANKFORT	P EM	12.4	1
FRANKFORT	P FE	9.6	1
FRANKFORT	P FO	00405.2	021
FRANKFORT	P FS	00327.0	012
FRANKFORT	P FW	3.8	1
FRANKFORT	P OW	14.0	3
FRANKFORT	P SE	122.9	3
FRANKFORT	P SS	00093.9	016
FRANKFORT	R3OW	00123.5	007
FRANKFORT	UNK	1.1	1
		1548.7	84

SUMMARY OF WETLANDS IN HAMPDEN, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
HAMPDEN	E1OW	198.8	1
HAMPDEN	E2BB	0.5	1
HAMPDEN	E2FL	43.2	10
HAMPDEN	L1OW	145.9	2
HAMPDEN	P EM	2.9	1
HAMPDEN	P FE	1.8	1
HAMPDEN	P FO	00758.5	025
HAMPDEN	P FS	00265.7	017
HAMPDEN	P OW	00037.8	030
HAMPDEN	P SE	00432.7	019
HAMPDEN	P SS	00223.4	031
HAMPDEN	R1FL	5.7	4
HAMPDEN	R1OW	00177.7	002
HAMPDEN	R2OW	36.0	2
HAMPDEN	R3OW	00014.7	003
		2345.3	149

SUMMARY OF WETLANDS IN ISLE AU HAUT, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ISLE AU HAUT	E2EM	2.9	1
ISLE AU HAUT	L1OW	72.2	1
ISLE AU HAUT	M1AB	280.3	19
ISLE AU HAUT	M2AB	10.7	2
ISLE AU HAUT	M2BB	34.0	7
ISLE AU HAUT	M2FL	40.2	4
ISLE AU HAUT	M2RS	393.5	70
ISLE AU HAUT	P EM	4.1	1
ISLE AU HAUT	P FO	126.4	27
ISLE AU HAUT	P SS	150.0	38
ISLE AU HAUT	UNK	29.3	3
		1143.6	173

SUMMARY OF WETLANDS IN ISLEBORO, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ISLEBORO	E2AB	14.0	1
ISLEBORO	E2BB	46.4	8
ISLEBORO	E2EM	42.5	5
ISLEBORO	E2FL	91.7	12
ISLEBORO	E2RS	00134.0	021
ISLEBORO	L1OW	27.6	1
ISLEBORO	M1AB	338.4	13
ISLEBORO	M1OW	5585.2	2
ISLEBORO	M2AB	54.2	9
ISLEBORO	M2BB	112.9	20
ISLEBORO	M2EM	5.7	1
ISLEBORO	M2FL	418.7	34
ISLEBORO	M2RS	1125.0	81
ISLEBORO	P FO	479.0	27
ISLEBORO	P SS	45.0	9
		8520.3	244

SUMMARY OF WETLANDS IN LINCOLNVILLE, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
LINCOLNVILLE	E1OW	9.3	3
LINCOLNVILLE	E2EM	7.2	2
LINCOLNVILLE	E2FL	8.8	2
LINCOLNVILLE	L1OW	01101.2	008
LINCOLNVILLE	M2BB	25.6	5
LINCOLNVILLE	P EM	108.0	24
LINCOLNVILLE	P FO	00879.7	103
LINCOLNVILLE	P FS	00284.2	022
LINCOLNVILLE	P OW	00034.5	028
LINCOLNVILLE	P SE	19.0	3
LINCOLNVILLE	P SS	00327.2	042
LINCOLNVILLE	R2OW	6.5	1
		2811.2	243

SUMMARY OF WETLANDS IN MONROE ISLAND, REGION 4

SATURDAY 18 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
MONROE ISLAND	M2BB	15.4	4
MONROE ISLAND	M2FL	81.5	2
MONROE ISLAND	M2RS	65.9	11
MONROE ISLAND	P OW	1.6	3
		164.4	20

SUMMARY OF WETLANDS IN MUSCLE RIDGE IS., REGION 4

SATURDAY 18 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
MUSCLE RIDGE IS.	M1AB	00084.0	011
MUSCLE RIDGE IS.	M1OW	00006.0	001
MUSCLE RIDGE IS.	M2AB	79.4	2
MUSCLE RIDGE IS.	M2BB	00029.0	003
MUSCLE RIDGE IS.	M2FL	00078.5	007
MUSCLE RIDGE IS.	M2RS	182.6	27
MUSCLE RIDGE IS.	P OW	00233.7	029
		693.2	80

SUMMARY OF WETLANDS IN NORTH HAVEN, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
NORTH HAVEN	E2EM	19.4	5
NORTH HAVEN	L1OW	76.5	1
NORTH HAVEN	M1AB	88.6	15
NORTH HAVEN	M2AB	9.9	4
NORTH HAVEN	M2BB	87.1	20
NORTH HAVEN	M2FL	422.6	41
NORTH HAVEN	M2RS	569.3	102
NORTH HAVEN	P EM	28.1	4
NORTH HAVEN	P FO	639.3	60
NORTH HAVEN	P SS	95.2	11
NORTH HAVEN	UNK	15.4	1
		2051.4	264

SUMMARY OF WETLANDS IN NORTHPORT, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
NORTHPORT	E2BB	19.1	1
NORTHPORT	E2FL	7.2	1
NORTHPORT	L1OW	00333.1	004
NORTHPORT	M1AB	4.3	1
NORTHPORT	M1OW	2011.6	1
NORTHPORT	M2BB	11.3	2
NORTHPORT	M2FL	99.2	8
NORTHPORT	M2RS	61.8	10
NORTHPORT	P EM	22.5	3
NORTHPORT	P FO	00948.0	046
NORTHPORT	P FS	100.1	7
NORTHPORT	P OW	6.6	4
NORTHPORT	P SE	66.4	2
NORTHPORT	P SS	00198.2	010
NORTHPORT	R2OW	7.5	1
		3896.9	101

SUMMARY OF WETLANDS IN ORLAND, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ORLAND	E1OW	04085.2	002
ORLAND	E1UB	00073.8	004
ORLAND	E2BB	2.7	1
ORLAND	E2EM	16.5	2
ORLAND	E2FL	00367.8	008
ORLAND	E2RS	23.2	3
ORLAND	L1OW	02828.4	012
ORLAND	L2BB	5.8	1
ORLAND	P EM	00064.6	008
ORLAND	P FE	6.8	2
ORLAND	P FO	00768.3	079
ORLAND	P FS	00226.6	013
ORLAND	P OW	00027.6	014
ORLAND	P SE	00111.9	006
ORLAND	P SS	00280.4	046
ORLAND	UNK	38.9	2
		8928.5	203

SUMMARY OF WETLANDS IN ORRINGTON, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ORRINGTON	E1OW	352.8	1
ORRINGTON	E2BB	18.1	7
ORRINGTON	E2EM	7.1	2
ORRINGTON	E2FL	114.4	8
ORRINGTON	E2RS	7.0	4
ORRINGTON	L1OW	00748.4	003
ORRINGTON	P EM	00011.8	008
ORRINGTON	P FO	00262.6	030
ORRINGTON	P FS	00130.7	013
ORRINGTON	P OW	00016.4	011
ORRINGTON	P SE	00203.6	012
ORRINGTON	P SS	00357.3	029
ORRINGTON	R1FL	0.7	1
ORRINGTON	R1OW	00123.8	002
ORRINGTON	R1RS	1.2	2
ORRINGTON	R2OW	00050.8	002
		2406.7	135

SUMMARY OF WETLANDS IN OWLS HEAD, REGION 4

SATURDAY 18 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
OWLS HEAD	E1OW	25.4	1
OWLS HEAD	E2AB	1.8	1
OWLS HEAD	E2EM	00044.0	006
OWLS HEAD	E2FL	00101.2	001
OWLS HEAD	E2RS	0.6	1
OWLS HEAD	M2AB	471.6	8
OWLS HEAD	M2BB	57.4	12
OWLS HEAD	M2FL	247.9	8
OWLS HEAD	M2RS	58.7	12
OWLS HEAD	P EM	5.7	3
OWLS HEAD	P FO	237.0	22
OWLS HEAD	P FS	273.6	22
OWLS HEAD	P OW	6.7	8
OWLS HEAD	P SS	00100.5	019
		1632.1	124

SUMMARY OF WETLANDS IN PENOBSCOT, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
PENOBSCOT	E1AB	3.2	1
PENOBSCOT	E1OW	1597.2	4
PENOBSCOT	E2AB	229.2	10
PENOBSCOT	E2EM	30.3	3
PENOBSCOT	E2FL	1213.3	16
PENOBSCOT	E2RS	106.4	12
PENOBSCOT	L1OW	00603.8	004
PENOBSCOT	M1OW	235.8	1
PENOBSCOT	M2FL	69.0	1
PENOBSCOT	M2RS	11.3	2
PENOBSCOT	P EM	00187.4	011
PENOBSCOT	P FE	00022.3	002
PENOBSCOT	P FO	01891.9	052
PENOBSCOT	P FS	58.2	2
PENOBSCOT	P OW	00004.8	003
PENOBSCOT	P SS	00382.5	029
		6646.6	153

SUMMARY OF WETLANDS IN PROSPECT, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
PROSPECT	E1UB	9.1	1
PROSPECT	E2EM	255.2	7
PROSPECT	E2FL	220.8	5
PROSPECT	L1OW	66.6	1
PROSPECT	P EM	3.0	1
PROSPECT	P FO	152.7	11
PROSPECT	P FS	118.5	9
PROSPECT	P FW	1.9	1
PROSPECT	P OW	4.7	5
PROSPECT	P SE	15.6	1
PROSPECT	P SS	113.3	15
PROSPECT	UNK	17.9	2
		979.3	59

SUMMARY OF WETLANDS IN ROCKLAND, REGION 4

SATURDAY 18 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ROCKLAND	E2EM	00030.0	001
ROCKLAND	L1OW	00157.7	004
ROCKLAND	M2AB	96.4	1
ROCKLAND	M2BB	8.4	2
ROCKLAND	M2FL	78.8	5
ROCKLAND	M2RS	9.8	1
ROCKLAND	P EM	00133.6	013
ROCKLAND	P FE	7.0	1
ROCKLAND	P FO	00267.6	035
ROCKLAND	P FS	64.7	8
ROCKLAND	P OW	00037.7	018
ROCKLAND	P SE	00025.5	005
ROCKLAND	P SS	00482.2	035
		1399.4	129

SUMMARY OF WETLANDS IN ROCKPORT, REGION 4

SATURDAY 18 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ROCKPORT	L1OW	00610.9	007
ROCKPORT	M2AB	00044.8	002
ROCKPORT	M2BB	00023.9	008
ROCKPORT	M2FL	00083.0	003
ROCKPORT	M2RS	00052.4	013
ROCKPORT	P EM	00088.3	014
ROCKPORT	P FO	00833.8	090
ROCKPORT	P FS	00093.1	019
ROCKPORT	P OW	00018.6	016
ROCKPORT	P SE	00016.4	002
ROCKPORT	P SS	00155.0	021
		2020.2	195

SUMMARY OF WETLANDS IN SEARSPORT, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SEARSPORT	E1OW	2.0	1
SEARSPORT	E2BB	16.2	3
SEARSPORT	E2EM	1.7	1
SEARSPORT	E2FL	64.1	3
SEARSPORT	E2RS	7.6	2
SEARSPORT	L1OW	00472.8	005
SEARSPORT	M1AB	22.5	2
SEARSPORT	M1OW	10271.6	5
SEARSPORT	M2AB	12.7	1
SEARSPORT	M2BB	51.1	5
SEARSPORT	M2FL	474.3	17
SEARSPORT	M2RS	237.5	22
SEARSPORT	P EM	16.0	2
SEARSPORT	P FO	00587.2	029
SEARSPORT	P FS	94.2	5
SEARSPORT	P OW	00003.9	002
SEARSPORT	P SS	00698.7	022
SEARSPORT	UNK	9.3	1
		13043.4	128

SUMMARY OF WETLANDS IN SEDGEWICK, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SEDGWICK	E1OW	174.3	3
SEDGWICK	E2AB	221.1	8
SEDGWICK	E2EM	19.5	1
SEDGWICK	E2FL	236.8	5
SEDGWICK	E2RS	54.1	2
SEDGWICK	L1OW	189.9	2
SEDGWICK	M2FL	52.5	5
SEDGWICK	M2RS	33.7	3
SEDGWICK	P EM	7.8	1
SEDGWICK	P FO	1041.1	33
SEDGWICK	P OW	10.2	2
SEDGWICK	P SS	376.7	15
		2417.7	80

SUMMARY OF WETLANDS IN STOCKTON SPRINGS, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
STOCKTON SPRINGS	E1OW	2076.3	2
STOCKTON SPRINGS	E2BB	17.7	007
STOCKTON SPRINGS	E2EM	11.7	003
STOCKTON SPRINGS	E2FL	00610.9	011
STOCKTON SPRINGS	E2RS	00057.2	014
STOCKTON SPRINGS	M1OW	3160.5	3
STOCKTON SPRINGS	M2AB	38.7	1
STOCKTON SPRINGS	M2BB	29.9	2
STOCKTON SPRINGS	M2FL	6.9	2
STOCKTON SPRINGS	M2RS	85.4	5
STOCKTON SPRINGS	P EM	12.8	4
STOCKTON SPRINGS	P FO	00144.4	020
STOCKTON SPRINGS	P FS	62.2	4
STOCKTON SPRINGS	P SE	140.0	3
STOCKTON SPRINGS	P SS	00252.6	015
STOCKTON SPRINGS	P UB	52.2	1
		6759.4	97

SUMMARY OF WETLANDS IN STONINGTON, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
STONINGTON	E2EM	2.2	1
STONINGTON	M1AB	42.9	7
STONINGTON	M1BB	1.0	1
STONINGTON	M2BB	4.5	1
STONINGTON	M2FL	483.9	22
STONINGTON	M2RS	227.7	59
STONINGTON	P EM	8.0	2
STONINGTON	P FO	448.4	29
STONINGTON	P OW	22.4	2
STONINGTON	P SS	14.9	3
		1255.9	127

SUMMARY OF WETLANDS IN SURRY, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SURRY	E1OW	70.7	1
SURRY	E2FL	00267.6	003
SURRY	E2RS	2.5	1
SURRY	L1OW	01217.7	004
SURRY	M1OW	7236.6	4
SURRY	M2AB	3.8	1
SURRY	M2FL	251.5	7
SURRY	M2RS	8.1	3
SURRY	P EM	00067.6	009
SURRY	P EO	2.6	1
SURRY	P FO	01044.5	050
SURRY	P FS	00231.1	012
SURRY	P OW	00226.9	011
SURRY	P SE	208.2	8
SURRY	P SS	00421.6	036
		11261.0	151

SUMMARY OF WETLANDS IN VERONA, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
VERONA	E2FL	316.5	5
VERONA	E2RS	79.0	4
VERONA	P FO	36.0	5
VERONA	P FS	22.9	3
VERONA	P SE	3.3	1
VERONA	P SS	49.2	6
		506.9	24

SUMMARY OF WETLANDS IN VINALHAVEN, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
VINALHAVEN	E1AB	42.1	4
VINALHAVEN	E1OW	152.2	2
VINALHAVEN	E2EM	00045.4	012
VINALHAVEN	E2FL	16.2	1
VINALHAVEN	M1AB	00545.1	054
VINALHAVEN	M1OW	00021.3	005
VINALHAVEN	M2AB	5.5	2
VINALHAVEN	M2BB	00097.2	030
VINALHAVEN	M2FL	01383.2	075
VINALHAVEN	M2RS	01393.0	209
VINALHAVEN	P FO	01220.3	092
VINALHAVEN	P OW	00012.6	009
VINALHAVEN	P SS	00045.0	009
		4979.1	504

SUMMARY OF WETLANDS IN WINTERPORT, REGION 4

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
WINTERPORT	E1OW	566.5	1
WINTERPORT	E2BB	1.5	1
WINTERPORT	E2EM	00094.0	013
WINTERPORT	E2FL	181.9	10
WINTERPORT	E2RS	3.1	3
WINTERPORT	P EM	00096.0	008
WINTERPORT	P FE	58.0	3
WINTERPORT	P FO	00446.1	027
WINTERPORT	P FS	00340.9	025
WINTERPORT	P FW	33.1	3
WINTERPORT	P OW	00031.8	020
WINTERPORT	P SE	13.3	2
WINTERPORT	P SO	00004.2	002
WINTERPORT	P SS	00218.9	030
WINTERPORT	R3OW	00061.2	004
		2150.5	152

Summary Totals of Wetlands (NWI) in Region 5

Wetland type	Acreage	Wetland type	Acreage
E1AB		PAB	
E1OW	5309.5	PEM	1633.9
E1RB		PEO	68.5
E1UB	1510.5	PFE	436.6
E2AB	601.5	PFO	20301.2
E2BB	11.5	PFS	4652.4
E2EM	2179.1	PFW	57.5
E2EO	23.4	POW	575.1
E2EU	397.4	PSE	3645.9
E2FL	6135.1	PSO	21.3
E2FM		PSS	9596.4
E2FS		PUB	
E2RF	21.1		
E2RS	457.3	R1BB	
E2SS		R1EM	
		R1FL	
L1AB		R1OW	
L1OW	19543.4	R1RS	
L1UB		R1UB	
L2AB	23.1	R2EM	
L2BB	0.6	R2OW	370.7
L2EM		R3OW	2.8
L2OW			
L2UB		UNKNOWN	419.0
M1AB	177.8		
M1BB			
M1OW	19869.2		
M1UB	5133.3		
M2AB	360.2		
M2BB	422.6		
M2FL	7752.6		
M2RF	79.0		
M2RS	4664.6	TOTAL	116454.1

SUMMARY OF WETLANDS IN BAR HARBOR, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BAR HARBOR	E2EM	81.5	6
BAR HARBOR	E2FL	73.1	3
BAR HARBOR	L1OW	724.5	9
BAR HARBOR	M1OW	4098.2	3
BAR HARBOR	M2BB	4.3	1
BAR HARBOR	M2FL	1015.3	17
BAR HARBOR	M2RS	68.5	17
BAR HARBOR	P EM	71.9	6
BAR HARBOR	P FO	977.3	48
BAR HARBOR	P OW	87.0	14
BAR HARBOR	P SS	995.1	32
		8196.7	156

SUMMARY OF WETLANDS IN CHERRYFIELD, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CHERRYFIELD	E2EM	52.7	9
CHERRYFIELD	E2EO	10.1	1
CHERRYFIELD	L1OW	106.4	1
CHERRYFIELD	P EM	00032.1	011
CHERRYFIELD	P EO	10.9	2
CHERRYFIELD	P FE	102.0	16
CHERRYFIELD	P FO	02249.5	114
CHERRYFIELD	P FS	00849.3	049
CHERRYFIELD	P FW	41.9	10
CHERRYFIELD	P OW	00104.1	047
CHERRYFIELD	P SE	00219.6	018
CHERRYFIELD	P SS	00188.6	027
CHERRYFIELD	R2OW	00252.0	011
CHERRYFIELD	R3OW	2.8	1
		4222.0	317

SUMMARY OF WETLANDS IN COLUMBIA, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
COLUMBIA	L1OW	138.8	6
COLUMBIA	P EM	70.3	6
COLUMBIA	P FE	12.6	4
COLUMBIA	P FO	888.4	51
COLUMBIA	P FS	396.4	31
COLUMBIA	P OW	26.1	14
COLUMBIA	P SE	595.7	14
COLUMBIA	P SO	3.6	2
COLUMBIA	P SS	2102.1	28
COLUMBIA	R2OW	40.6	2
		4274.6	158

SUMMARY OF WETLANDS IN CRANBERRY ISLES, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CRANBERRY ISLES	E2EM	72.3	3
CRANBERRY ISLES	M2BB	00013.2	003
CRANBERRY ISLES	M2FL	00112.9	006
CRANBERRY ISLES	M2RS	00203.5	019
CRANBERRY ISLES	P FO	182.4	3
CRANBERRY ISLES	P SS	156.3	1
		740.6	35

SUMMARY OF WETLANDS IN ELLSWORTH, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ELLSWORTH	E1OW	00171.2	003
ELLSWORTH	E1UB	32.4	1
ELLSWORTH	E2FL	00320.8	009
ELLSWORTH	E2RS	00022.5	002
ELLSWORTH	L1OW	08642.9	020
ELLSWORTH	L2BB	0.6	1
ELLSWORTH	M1OW	95.9	1
ELLSWORTH	M2FL	21.3	1
ELLSWORTH	P EM	00293.3	015
ELLSWORTH	P EO	00047.1	005
ELLSWORTH	P FE	15.4	1
ELLSWORTH	P FO	01522.7	134
ELLSWORTH	P FS	00741.8	036
ELLSWORTH	P OW	00025.8	021
ELLSWORTH	P SE	00761.4	033
ELLSWORTH	P SS	00496.7	050
ELLSWORTH	R2OW	00070.1	004
		13281.9	337

SUMMARY OF WETLANDS IN FRANKLIN, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
FRANKLIN	E1OW	00683.6	003
FRANKLIN	E1UB	355.5	5
FRANKLIN	E2AB	280.0	11
FRANKLIN	E2EM	00130.6	017
FRANKLIN	E2EU	12.1	1
FRANKLIN	E2FL	01423.4	018
FRANKLIN	E2RS	152.1	7
FRANKLIN	L1OW	00890.1	009
FRANKLIN	P EM	00051.0	004
FRANKLIN	P FE	18.9	2
FRANKLIN	P FO	01402.9	080
FRANKLIN	P FS	00333.0	028
FRANKLIN	P OW	00018.8	009
FRANKLIN	P SE	00474.6	023
FRANKLIN	P SS	00423.5	031
		6650.1	248

SUMMARY OF WETLANDS IN GOULDSBORO, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
GOULDSBORO	E1OW	369.2	1
GOULDSBORO	E1UB	3.9	1
GOULDSBORO	E2BB	2.6	2
GOULDSBORO	E2EM	00283.0	018
GOULDSBORO	E2FL	01073.1	006
GOULDSBORO	E2RS	00068.4	008
GOULDSBORO	L1OW	813.7	7
GOULDSBORO	M1AB	35.5	2
GOULDSBORO	M1OW	5.9	1
GOULDSBORO	M1UB	200.0	5
GOULDSBORO	M2AB	00051.5	003
GOULDSBORO	M2BB	00074.5	016
GOULDSBORO	M2FL	01056.9	038
GOULDSBORO	M2RF	72.2	4
GOULDSBORO	M2RS	00548.7	059
GOULDSBORO	P EM	386.6	13
GOULDSBORO	P FE	6.2	1
GOULDSBORO	P FO	01170.9	071
GOULDSBORO	P FS	00030.7	004
GOULDSBORO	P OW	00032.2	004
GOULDSBORO	P SS	01262.0	066
GOULDSBORO	UNK	68.5	4
		7616.2	334

SUMMARY OF WETLANDS IN HANCOCK, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
HANCOCK	E1OW	00434.0	006
HANCOCK	E1UB	797.4	2
HANCOCK	E2AB	00184.9	007
HANCOCK	E2EM	00080.0	010
HANCOCK	E2FL	00639.0	021
HANCOCK	E2RS	00027.8	008
HANCOCK	M1OW	371.5	1
HANCOCK	M2AB	16.9	2
HANCOCK	M2BB	1.4	1
HANCOCK	M2FL	78.3	5
HANCOCK	M2RS	31.1	2
HANCOCK	P EM	11.9	2
HANCOCK	P FO	00700.3	033
HANCOCK	P FS	00287.2	016
HANCOCK	P OW	33.6	11
HANCOCK	P SE	211.1	13
HANCOCK	P SS	80.7	11
		3987.1	151

SUMMARY OF WETLANDS IN HARRINGTON, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
HARRINGTON	E1OW	1128.3	7
HARRINGTON	E2BB	5.8	3
HARRINGTON	E2EM	00573.4	039
HARRINGTON	E2EU	161.9	9
HARRINGTON	E2FL	2253.1	9
HARRINGTON	E2RS	22.3	15
HARRINGTON	M1AB	12.8	2
HARRINGTON	M1OW	325.4	1
HARRINGTON	M1UB	01737.4	011
HARRINGTON	M2BB	00013.9	015
HARRINGTON	M2FL	00163.9	006
HARRINGTON	M2RS	00201.6	034
HARRINGTON	P EM	26.5	4
HARRINGTON	P FE	1.3	1
HARRINGTON	P FO	00463.3	034
HARRINGTON	P FS	117.1	15
HARRINGTON	P OW	6.1	3
HARRINGTON	P SS	00164.1	014
		7378.2	222

SUMMARY OF WETLANDS IN LAMOINE, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
LAMOINE	E1OW	00365.2	003
LAMOINE	E1UB	277.9	4
LAMOINE	E2AB	76.1	3
LAMOINE	E2EM	00089.9	006
LAMOINE	E2FL	01076.0	017
LAMOINE	E2RS	107.2	6
LAMOINE	L1OW	31.9	1
LAMOINE	M1OW	1959.7	4
LAMOINE	M2FL	408.0	4
LAMOINE	M2RS	73.9	5
LAMOINE	P EM	5.4	1
LAMOINE	P FO	00169.9	010
LAMOINE	P FS	43.4	4
LAMOINE	P OW	1.6	2
LAMOINE	P SS	00045.5	004
LAMOINE	UNK	84.7	1
		4816.3	75

SUMMARY OF WETLANDS IN LONG ISLAND, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
LONG ISLAND	E2EM	3.8	1
LONG ISLAND	M1OW	506.8	1
LONG ISLAND	M2AB	8.1	1
LONG ISLAND	M2BB	5.8	2
LONG ISLAND	M2FL	12.4	1
LONG ISLAND	M2RS	96.5	9
LONG ISLAND	P FO	47.4	6
LONG ISLAND	P SS	80.7	5
		761.5	26

SUMMARY OF WETLANDS IN MILBRIDGE, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
MILBRIDGE	E1OW	00418.7	008
MILBRIDGE	E2BB	1.1	1
MILBRIDGE	E2EM	00336.3	041
MILBRIDGE	E2EO	00012.6	004
MILBRIDGE	E2EU	00223.4	006
MILBRIDGE	E2FL	00639.3	010
MILBRIDGE	E2RF	21.1	1
MILBRIDGE	E2RS	29.7	10
MILBRIDGE	L1OW	00030.9	003
MILBRIDGE	M1AB	30.9	1
MILBRIDGE	M1OW	00865.1	003
MILBRIDGE	M1UB	01355.7	011
MILBRIDGE	M2BB	11.4	3
MILBRIDGE	M2FL	00379.7	013
MILBRIDGE	M2RS	00267.6	028
MILBRIDGE	P EM	7.9	2
MILBRIDGE	P FE	4.7	1
MILBRIDGE	P FO	01084.0	051
MILBRIDGE	P FS	95.0	6
MILBRIDGE	P OW	24.3	7
MILBRIDGE	P SE	41.3	3
MILBRIDGE	P SS	00116.8	015
		5997.5	228

SUMMARY OF WETLANDS IN MOUNT DESERT, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
MOUNT DESERT	E1OW	1376.2	1
MOUNT DESERT	E2EM	49.3	4
MOUNT DESERT	E2FL	00044.5	004
MOUNT DESERT	L1OW	01369.2	010
MOUNT DESERT	L2EM	12.6	1
MOUNT DESERT	M1OW	3433.1	2
MOUNT DESERT	M2BB	6.0	1
MOUNT DESERT	M2FL	00421.4	019
MOUNT DESERT	M2RS	00982.9	012
MOUNT DESERT	P EM	12.2	2
MOUNT DESERT	P FO	00563.5	055
MOUNT DESERT	P OW	9.4	2
MOUNT DESERT	P SS	00250.4	023
		8530.7	136

SUMMARY OF WETLANDS IN SORRENTO, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SORRENTO	M1AB	49.3	4
SORRENTO	M2AB	57.4	5
SORRENTO	M2FL	369.7	10
SORRENTO	M2RS	93.0	9
SORRENTO	P FO	23.2	1
SORRENTO	P SS	20.1	1
		612.7	30

SUMMARY OF WETLANDS IN SOUTHWEST HARBOR, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SOUTHWEST HARBOR	E2EM	84.7	3
SOUTHWEST HARBOR	E2FL	24.0	1
SOUTHWEST HARBOR	L1OW	210.0	1
SOUTHWEST HARBOR	M1OW	1753.1	2
SOUTHWEST HARBOR	M2FL	210.6	11
SOUTHWEST HARBOR	M2RS	13.5	3
SOUTHWEST HARBOR	P EM	17.3	1
SOUTHWEST HARBOR	P FO	205.1	24
SOUTHWEST HARBOR	P OW	2.9	3
SOUTHWEST HARBOR	P SS	120.0	14
		2641.2	63

SUMMARY OF WETLANDS IN STEUBEN, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
STEUBEN	E1OW	00179.1	003
STEUBEN	E1UB	15.8	2
STEUBEN	E2BB	2.0	1
STEUBEN	E2EM	00239.5	030
STEUBEN	E2EO	0.7	1
STEUBEN	E2FL	00456.2	003
STEUBEN	E2RS	00002.0	002
STEUBEN	L1OW	00183.1	003
STEUBEN	L2AB	23.1	2
STEUBEN	M1AB	15.5	3
STEUBEN	M1OW	1605.7	4
STEUBEN	M1UB	1840.2	11
STEUBEN	M2AB	132.6	12
STEUBEN	M2BB	194.9	18
STEUBEN	M2FL	1076.7	45
STEUBEN	M2RF	6.8	2
STEUBEN	M2RS	220.6	62
STEUBEN	P EM	00027.4	008
STEUBEN	P FE	132.5	14
STEUBEN	P FO	02481.1	076
STEUBEN	P FS	00297.5	032
STEUBEN	P FW	15.6	5
STEUBEN	P OW	00043.8	010
STEUBEN	P SE	00261.6	016
STEUBEN	P SO	0.9	1
STEUBEN	P SS	00832.1	035
STEUBEN	R2OW	3.9	1
STEUBEN	UNK	215.6	8
		10506.5	410

SUMMARY OF WETLANDS IN SULLIVAN, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SULLIVAN	E1OW	00177.6	003
SULLIVAN	E1UB	24.0	1
SULLIVAN	E2AB	60.5	1
SULLIVAN	E2EM	9.7	5
SULLIVAN	E2FL	00043.5	004
SULLIVAN	E2RS	00025.3	002
SULLIVAN	L1OW	937.1	9
SULLIVAN	M2AB	41.7	3
SULLIVAN	M2FL	184.6	5
SULLIVAN	M2RS	6.4	2
SULLIVAN	P EM	16.7	3
SULLIVAN	P FO	1374.9	68
SULLIVAN	P FS	171.8	13
SULLIVAN	P OW	17.8	10
SULLIVAN	P SE	326.0	17
SULLIVAN	P SS	299.3	25
		3716.9	171

SUMMARY OF WETLANDS IN SWANS ISLAND, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
SWANS ISLAND	E1OW	1.9	1
SWANS ISLAND	E2EM	13.1	2
SWANS ISLAND	L1OW	11.3	1
SWANS ISLAND	M1AB	00022.0	003
SWANS ISLAND	M1OW	13.3	1
SWANS ISLAND	M2AB	52.0	7
SWANS ISLAND	M2RB	28.5	6
SWANS ISLAND	M2FL	282.8	19
SWANS ISLAND	M2RS	00929.4	063
SWANS ISLAND	P EM	34.1	4
SWANS ISLAND	P FO	00319.9	032
SWANS ISLAND	P OW	2.2	2
SWANS ISLAND	P SS	00148.4	026
SWANS ISLAND	UNK	23.0	2
		1881.9	169

SUMMARY OF WETLANDS IN T7SD, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
T7SD	E1UB	3.6	1
T7SD	L1OW	481.9	6
T7SD	P EM	169.6	7
T7SD	P EO	8.8	1
T7SD	P FF	38.2	5
T7SD	P FO	00491.0	050
T7SD	P FS	00101.3	012
T7SD	P OW	30.3	4
T7SD	P SE	87.2	5
T7SD	P SS	230.7	16
		1642.6	107

SUMMARY OF WETLANDS IN T8SD, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
T8SD	L1OW	614.5	1
T8SD	P EM	164.0	9
T8SD	P FO	1237.9	26
T8SD	P FS	451.1	25
T8SD	P OW	5.8	5
T8SD	P SE	357.4	19
T8SD	P SS	214.3	19
		3045.0	104

SUMMARY OF WETLANDS IN T9SD, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
T9SD	L1OW	1105.2	1
T9SD	P FO	126.9	5
T9SD	P FS	34.2	3
T9SD	P OW	8.8	2
T9SD	P SE	51.1	3
T9SD	P SS	61.2	3
		1387.4	17

SUMMARY OF WETLANDS IN T10SD, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
T10SD	L10W	3011.2	16
T10SD	P EM	170.4	12
T10SD	P EO	1.7	1
T10SD	P FE	104.8	15
T10SD	P FO	01254.9	118
T10SD	P FS	686.3	49
T10SD	P OW	44.6	15
T10SD	P SE	00258.9	024
T10SD	P SO	16.8	3
T10SD	P SS	402.0	36
T10SD	R2OW	4.1	1
T10SD	UNK	27.2	1
		5982.9	291

SUMMARY OF WETLANDS IN TREMONT, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
TREMONT	E2EM	00060.3	007
TREMONT	E2FL	31.1	2
TREMONT	L1OW	253.1	2
TREMONT	M1AB	11.8	1
TREMONT	M2BB	13.9	2
TREMONT	M2FL	00534.6	020
TREMONT	M2RS	00282.8	033
TREMONT	P EM	00047.5	006
TREMONT	P FO	00555.2	041
TREMONT	P OW	00006.4	002
TREMONT	P SS	00366.6	023
		2163.3	139

SUMMARY OF WETLANDS IN TRENTON, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
TRENTON	E1OW	4.5	1
TRENTON	E2EM	10.5	1
TRENTON	E2FL	466.1	2
TRENTON	M1OW	4825.5	5
TRENTON	M2FL	1196.7	4
TRENTON	M2RS	41.1	6
TRENTON	P EM	5.2	1
TRENTON	P FO	693.3	11
TRENTON	P FS	16.3	1
TRENTON	P OW	13.7	2
TRENTON	P SS	237.4	9
		7510.3	43

SUMMARY OF WETLANDS IN WINTER HARBOR, REGION 5

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
WINTER HARBOR	E2EM	8.5	2
WINTER HARBOR	L1OW	17.4	1
WINTER HARBOR	M2BB	54.8	3
WINTER HARBOR	M2FL	226.8	9
WINTER HARBOR	M2RS	603.5	26
WINTER HARBOR	P FO	115.3	8
WINTER HARBOR	P SS	262.6	16
		1288.9	65

Summary Totals of Wetlands (NWI) in Region 6

Wetland type	Acreage	Wetland type	Acreage
E1AB	3.7	PAB	45.2
E1OW	12938.6	PEM	1688.0
E1RB	58.7	PEO	
E1UB	1161.9	PFE	32.6
E2AB	568.9	PFO	38737.3
E2BB	415.0	PFS	801.6
E2EM	2666.4	PFW	
E2EO		POW	520.1
E2EU		PSE	268.9
E2FL	8809.1	PSO	
E2FM		PSS	15737.0
E2FS		PUB	
E2RF			
E2RS	1425.6	R1BB	
E2SS	57.9	R1EM	7.5
		R1FL	193.2
L1AB	27.3	R1OW	96.9
L1OW	12883.9	R1RS	
L1UB		R1UB	
L2AB	159.5	R2EM	79.0
L2BB		R2OW	646.2
L2EM		R3OW	534.6
L2OW	84.9		
L2UB	70.8	UNKNOWN	1683.0
M1AB	586.0		
M1BB			
M1OW	10422.1		
M1UB	18668.6		
M2AB	1317.8		
M2BB	1245.2		
M2FL	8011.3		
M2RF	21.3		
M2RS	4224.8	TOTAL	146935.2

SUMMARY LISTING OF WETLANDS IN BEALS, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
BEALS	E2EM	5.7	4
BEALS	M1AB	44.1	3
BEALS	M1OW	161.1	1
BEALS	M1UB	1495.3	19
BEALS	M2AB	168.2	11
BEALS	M2BB	18.4	8
BEALS	M2FL	601.4	34
BEALS	M2RS	814.9	78
BEALS	P FO	391.1	23
BEALS	P FS	24.5	2
BEALS	P OW	3.4	2
BEALS	P SS	153.4	12
BEALS	UNK	9.5	3
		3891.0	200

SUMMARY OF WETLANDS IN ADDISON, REGION 6

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ADDISON	E1OW	00880.5	007
ADDISON	E1UB	56.3	3
ADDISON	E2BB	10.8	1
ADDISON	E2EM	00569.0	051
ADDISON	E2FL	01540.3	012
ADDISON	E2RS	33.5	7
ADDISON	M1AB	00367.3	006
ADDISON	M1OW	03780.1	006
ADDISON	M1UB	02165.0	010
ADDISON	M2BB	00039.0	014
ADDISON	M2FL	00459.2	018
ADDISON	M2RS	00516.5	078
ADDISON	P EM	00033.8	004
ADDISON	P FO	02807.3	117
ADDISON	P FS	32.5	3
ADDISON	P OW	38.1	8
ADDISON	P SE	26.7	2
ADDISON	P SS	00992.7	062
ADDISON	R2OW	2.5	2
ADDISON	UNK	33.2	7
		14384.3	418

SUMMARY LISTING OF WETLANDS IN CALAIS, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CALAIS	E1OW	1674.9	3
CALAIS	E2BB	21.1	7
CALAIS	E2FL	254.3	12
CALAIS	E2RS	45.2	13
CALAIS	L1OW	1320.9	7
CALAIS	P EM	677.5	31
CALAIS	P FE	11.1	1
CALAIS	P FO	1634.1	119
CALAIS	P FS	191.6	22
CALAIS	P OW	36.6	10
CALAIS	P SE	79.3	8
CALAIS	P SS	1174.0	127
CALAIS	R1FL	193.2	1
CALAIS	R1OW	82.4	2
CALAIS	R3OW	313.3	3
CALAIS	UNK	34.1	8
		7743.6	374

SUMMARY LISTING OF WETLANDS IN CENTERVILLE, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CENTERVILLE	P FO	9405.1	51
CENTERVILLE	P OW	7.4	4
CENTERVILLE	P SS	1557.1	45
CENTERVILLE	R2OW	237.6	2
CENTERVILLE	UNK	4.1	1
		11211.3	103

SUMMARY OF WETLANDS IN COLUMBIA FALLS, REGION 6

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
COLUMBIA FALLS	E1OW	92.6	1
COLUMBIA FALLS	E2EM	177.0	8
COLUMBIA FALLS	E2FL	3.0	1
COLUMBIA FALLS	L1OW	1.7	1
COLUMBIA FALLS	P EM	00017.5	003
COLUMBIA FALLS	P FO	01909.4	066
COLUMBIA FALLS	P FS	25.6	5
COLUMBIA FALLS	P OW	00003.0	003
COLUMBIA FALLS	P SE	7.6	2
COLUMBIA FALLS	P SS	00209.9	036
COLUMBIA FALLS	R2OW	00016.7	002
COLUMBIA FALLS	UNK	69.2	8
		2533.2	136

SUMMARY LISTING OF WETLANDS IN CUTLER, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
CUTLER	E1OW	0.4	1
CUTLER	E2BB	2.5	1
CUTLER	E2EM	81.2	11
CUTLER	E2FL	10.0	1
CUTLER	L1OW	8.6	1
CUTLER	M1AB	67.8	7
CUTLER	M1FL	63.7	3
CUTLER	M1OW	575.4	2
CUTLER	M1UB	2120.7	11
CUTLER	M2AB	50.5	4
CUTLER	M2BB	89.0	24
CUTLER	M2FL	822.5	23
CUTLER	M2RS	465.1	54
CUTLER	P EM	27.7	8
CUTLER	P FO	1782.2	93
CUTLER	P OW	72.3	16
CUTLER	P SS	2399.1	89
CUTLER	UNK	6.8	3
		8645.5	352

SUMMARY LISTING OF WETLANDS IN DENNYSVILLE, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
DENNYSVILLE	E1RB	47.4	3
DENNYSVILLE	E2EM	48.9	5
DENNYSVILLE	E2FL	139.5	8
DENNYSVILLE	E2RS	41.8	3
DENNYSVILLE	P EM	45.9	5
DENNYSVILLE	P FO	1690.4	35
DENNYSVILLE	P OW	1.5	1
DENNYSVILLE	P SS	204.5	18
DENNYSVILLE	R3OW	13.0	2
DENNYSVILLE	UNK	3.1	1
		2236.0	81

SUMMARY LISTING OF WETLANDS IN EAST MACHIAS, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
EAST MACHIAS	E2EM	179.2	12
EAST MACHIAS	E2FL	202.6	1
EAST MACHIAS	L1OW	1728.0	2
EAST MACHIAS	P EM	70.3	6
EAST MACHIAS	P FO	2233.7	64
EAST MACHIAS	P OW	108.8	6
EAST MACHIAS	P SS	574.4	17
EAST MACHIAS	R2OW	71.5	2
EAST MACHIAS	R3OW	140.3	2
		5308.8	112

SUMMARY LISTING OF WETLANDS IN EASTPORT, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
EASTPORT	E1UB	97.4	7
EASTPORT	E2AB	7.5	1
EASTPORT	E2BB	69.5	6
EASTPORT	E2EM	2.0	2
EASTPORT	E2FL	38.0	4
EASTPORT	E2RS	51.1	7
EASTPORT	M1UB	376.9	6
EASTPORT	M2AB	157.1	4
EASTPORT	M2BB	89.4	17
EASTPORT	M2FL	253.9	13
EASTPORT	M2RS	134.1	26
EASTPORT	P OW	0.7	1
EASTPORT	P SS	0.5	1
EASTPORT	UNK	782.0	3
		2060.1	98

SUMMARY LISTING OF WETLANDS IN EDMUNDS, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
EDMUNDS	E1AB	3.7	1
EDMUNDS	E1OW	98.3	3
EDMUNDS	E1RB	4.6	1
EDMUNDS	E1UB	189.0	8
EDMUNDS	E2AB	197.3	19
EDMUNDS	E2BB	1.3	1
EDMUNDS	E2EM	109.9	23
EDMUNDS	E2FL	404.1	28
EDMUNDS	E2RS	329.7	72
EDMUNDS	L1OW	97.9	2
EDMUNDS	L2OW	1.9	1
EDMUNDS	P EM	47.9	7
EDMUNDS	P FE	21.5	2
EDMUNDS	P FO	2060.5	91
EDMUNDS	P FS	25.7	3
EDMUNDS	P OW	38.1	5
EDMUNDS	P SE	3.2	1
EDMUNDS	P SS	1131.8	46
EDMUNDS	R2OW	3.6	1
EDMUNDS	UNK	9.0	2
		4779.0	317

SUMMARY LISTING OF WETLANDS IN JONESBOROUGH, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
JONESBOROUGH	E1OW	235.4	2
JONESBOROUGH	E1UB	37.6	1
JONESBOROUGH	E2BB	46.7	7
JONESBOROUGH	E2EM	80.0	13
JONESBOROUGH	E2FL	694.6	12
JONESBOROUGH	E2RS	31.5	8
JONESBOROUGH	L1OW	4.3	1
JONESBOROUGH	M1UB	54.8	1
JONESBOROUGH	P EM	21.5	4
JONESBOROUGH	P FO	1511.1	61
JONESBOROUGH	P OW	14.5	6
JONESBOROUGH	P SS	215.6	24
JONESBOROUGH	R1EM	7.5	5
JONESBOROUGH	R1OW	14.5	1
JONESBOROUGH	R2OW	8.1	3
JONESBOROUGH	R3OW	6.5	1
JONESBOROUGH	UNK	1.3	1
		2985.5	151

SUMMARY LISTING OF WETLANDS IN JONESPORT, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
JONESPORT	E1OW	99.0	4
JONESPORT	E1UB	134.7	2
JONESPORT	E2BB	18.0	3
JONESPORT	E2EM	157.1	28
JONESPORT	E2FL	870.9	9
JONESPORT	E2RS	19.1	6
JONESPORT	L1OW	12.9	1
JONESPORT	M1AB	76.5	7
JONESPORT	M1OW	112.3	2
JONESPORT	M1UB	1867.1	19
JONESPORT	M2AB	214.0	21
JONESPORT	M2BB	297.4	59
JONESPORT	M2FL	684.0	41
JONESPORT	M2RS	698.6	144
JONESPORT	MIUB	34.4	1
JONESPORT	P FO	1337.2	72
JONESPORT	P OW	1.9	1
JONESPORT	P SS	1417.2	57
JONESPORT	UNK	71.7	16
		8124.0	493

SUMMARY OF WETLANDS IN LUBEC, REGION 6

FRIDAY 17 AUGUST 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
LUBEC	E1OW	725.3	10
LUBEC	E1UB	17.7	3
LUBEC	E2AB	54.3	9
LUBEC	E2BB	0.9	1
LUBEC	E2EM	240.0	29
LUBEC	E2FL	999.4	35
LUBEC	E2RS	00150.9	058
LUBEC	E2SS	57.9	3
LUBEC	M1OW	628.4	5
LUBEC	M1UB	3017.4	15
LUBEC	M2AB	247.9	26
LUBEC	M2BB	328.1	54
LUBEC	M2FL	1274.6	29
LUBEC	M2RF	21.3	1
LUBEC	M2RS	408.2	90
LUBEC	M2UB	9.6	1
LUBEC	P EM	30.6	5
LUBEC	P FO	327.2	34
LUBEC	P OW	5.9	5
LUBEC	P SS	374.3	47
LUBEC	UNK	407.4	12
		9327.3	472

SUMMARY LISTING OF WETLANDS IN MACHIAS, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
MACHIAS	E2EM	277.9	4
MACHIAS	E2FL	355.2	2
MACHIAS	L1OW	17.7	2
MACHIAS	P EM	72.5	3
MACHIAS	P FO	407.9	31
MACHIAS	P FS	14.1	1
MACHIAS	P OW	6.9	3
MACHIAS	P SE	3.9	1
MACHIAS	P SS	59.1	11
MACHIAS	R2OW	21.4	1
MACHIAS	R3OW	60.7	1
MACHIAS	UNK	6.8	2
		1304.1	62

SUMMARY LISTING OF WETLANDS IN MACHIASPORT, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
MACHIASPORT	E1UB	18.7	1
MACHIASPORT	E2BB	2.5	1
MACHIASPORT	E2EM	200.0	27
MACHIASPORT	E2FL	987.7	8
MACHIASPORT	E2OW	1.2	1
MACHIASPORT	E2RS	8.3	6
MACHIASPORT	M1AB	14.3	2
MACHIASPORT	M1OW	4675.1	3
MACHIASPORT	M1UB	4159.2	12
MACHIASPORT	M2AB	145.9	3
MACHIASPORT	M2BB	181.7	10
MACHIASPORT	M2FL	2493.0	18
MACHIASPORT	M2RS	353.8	44
MACHIASPORT	P EM	6.3	1
MACHIASPORT	P FO	595.7	25
MACHIASPORT	P OW	16.3	2
MACHIASPORT	P SS	114.8	7
MACHIASPORT	UNK	31.7	2
		14006.2	173

SUMMARY LISTING OF WETLANDS IN MARION, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
MARION	L1OW	6233.7	7
MARION	L2AB	110.9	1
MARION	P EM	22.3	2
MARION	P FO	1541.1	83
MARION	P OW	33.6	4
MARION	P SS	1220.3	34
		9161.9	131

SUMMARY LISTING OF WETLANDS IN MARSHFIELD, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
MARSHFIELD	L1OW	289.9	5
MARSHFIELD	L2OW	9.1	1
MARSHFIELD	P EM	81.1	1
MARSHFIELD	P OW	17.7	2
MARSHFIELD	P SE	96.1	1
MARSHFIELD	P SS	242.3	16
MARSHFIELD	R2OW	19.4	1
MARSHFIELD	UNK	20.7	1
MARSHFILED	P FO	635.8	41
		1412.1	69

SUMMARY LISTING OF WETLANDS IN PEMBROKE, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
PEMBROKE	E1OW	1864.8	5
PEMBROKE	E1RB	6.7	1
PEMBROKE	E1UB	261.5	7
PEMBROKE	E2AB	135.3	11
PEMBROKE	E2BB	21.8	3
PEMBROKE	E2EM	79.9	30
PEMBROKE	E2FL	643.9	26
PEMBROKE	E2RS	248.0	56
PEMBROKE	L1OW	86.0	5
PEMBROKE	L2EM	79.0	1
PEMBROKE	L2OW	6.2	1
PEMBROKE	M1OW	338.9	1
PEMBROKE	M1UB	219.9	2
PEMBROKE	M2AB	75.5	8
PEMBROKE	M2BB	75.9	12
PEMBROKE	M2FL	289.8	15
PEMBROKE	M2RS	109.6	14
PEMBROKE	P EM	137.8	23
PEMBROKE	P FO	1261.0	54
PEMBROKE	P FS	14.0	3
PEMBROKE	P OW	0.8	1
PEMBROKE	P SS	416.6	43
PEMBROKE	R2OW	13.1	1
PEMBROKE	R3OW	0.8	1
PEMBROKE	UNK	31.4	3
		6418.2	327

SUMMARY LISTING OF WETLANDS IN PERRY, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
PERRY	E1OW	2805.8	4
PERRY	E1UB	197.7	6
PERRY	E2AB	40.6	3
PERRY	E2BB	130.2	14
PERRY	E2EM	187.6	31
PERRY	E2FL	424.9	19
PERRY	E2RS	63.6	16
PERRY	L1OW	1748.6	4
PERRY	L2OW	67.2	1
PERRY	L2UB	70.8	3
PERRY	M1UB	698.9	7
PERRY	M2AB	215.0	8
PERRY	M2BB	22.7	5
PERRY	M2FL	528.3	17
PERRY	M2RS	155.1	25
PERRY	P EM	147.1	22
PERRY	P FO	975.9	70
PERRY	P FS	94.4	6
PERRY	P OW	5.5	3
PERRY	P SS	495.1	57
PERRY	UNK	70.0	4
		9145.0	325

SUMMARY LISTING OF WETLANDS IN ROBBINSTON, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ROBBINSTON	E1OW	3432.3	2
ROBBINSTON	E2BB	56.8	10
ROBBINSTON	E2EM	7.6	6
ROBBINSTON	E2FL	209.7	17
ROBBINSTON	E2RS	88.3	22
ROBBINSTON	L1OW	478.9	5
ROBBINSTON	L2OW	9.6	4
ROBBINSTON	P EM	34.9	9
ROBBINSTON	P FO	961.9	92
ROBBINSTON	P FS	378.2	29
ROBBINSTON	P OW	68.3	9
ROBBINSTON	P SE	39.9	2
ROBBINSTON	P SS	366.3	54
		6132.7	261

SUMMARY LISTING OF WETLANDS IN ROQUE BLUFFS, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
ROQUE BLUFFS	E1OW	15.3	2
ROQUE BLUFFS	E2BB	29.0	3
ROQUE BLUFFS	E2EM	80.1	5
ROQUE BLUFFS	E2FL	58.1	6
ROQUE BLUFFS	E2RS	35.8	10
ROQUE BLUFFS	L1OW	32.9	1
ROQUE BLUFFS	M1AB	16.0	2
ROQUE BLUFFS	M1OW	38.9	1
ROQUE BLUFFS	M1UB	2283.9	8
ROQUE BLUFFS	M2AB	28.5	3
ROQUE BLUFFS	M2BB	81.7	16
ROQUE BLUFFS	M2EM	3.2	2
ROQUE BLUFFS	M2FL	426.2	14
ROQUE BLUFFS	M2RS	369.3	31
ROQUE BLUFFS	P EM	28.3	2
ROQUE BLUFFS	P FO	456.4	25
ROQUE BLUFFS	P OW	2.2	1
ROQUE BLUFFS	P SS	57.9	4
		4043.7	136

SUMMARY LISTING OF WETLANDS IN TRESCOTT, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
TRESCOTT	E1OW	1012.8	4
TRESCOTT	E1UB	151.3	8
TRESCOTT	E2AB	133.9	13
TRESCOTT	E2BB	3.9	2
TRESCOTT	E2EM	133.7	25
TRESCOTT	E2FL	951.1	36
TRESCOTT	E2RS	275.8	51
TRESCOTT	L1OW	22.1	1
TRESCOTT	M1UB	175.1	3
TRESCOTT	M2AB	15.2	1
TRESCOTT	M2BB	21.9	10
TRESCOTT	M2FL	114.7	2
TRESCOTT	M2RS	199.6	15
TRESCOTT	M2UB	25.2	1
TRESCOTT	P EM	35.3	6
TRESCOTT	P FO	405.9	35
TRESCOTT	P OW	7.0	5
TRESCOTT	P SE	12.2	1
TRESCOTT	P SS	508.7	41
TRESCOTT	UNK	36.2	4
		4241.6	264

SUMMARY LISTING OF WETLANDS IN WHITING, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
WHITING	E2EM	46.4	8
WHITING	E2FL	21.8	1
WHITING	E2RS	3.0	1
WHITING	L1AB	68.8	6
WHITING	L1OW	972.8	13
WHITING	L2AB	52.3	3
WHITING	M1OW	21.9	1
WHITING	P EM	119.6	12
WHITING	P FO	2860.8	130
WHITING	P FS	1.0	1
WHITING	P OW	23.1	4
WHITING	P SS	1549.6	79
WHITING	R2OW	16.0	1
WHITING	UNK	45.3	2
		5802.4	262

SUMMARY LISTING OF WETLANDS IN WHITNEYVILLE, MAINE

WEDNESDAY 7 MARCH 1979

TOWN	WETLAND TYPE	ACREAGE	# UNITS
WHITNEYVILLE	P EM	30.1	2
WHITNEYVILLE	P FO	1584.1	37
WHITNEYVILLE	P OW	23.4	7
WHITNEYVILLE	P SS	301.8	17
WHITNEYVILLE	UNK	9.5	1
		1948.9	64

APPENDIX B

Towns in Each Region of the Characterization Area

Region 1

Brunswick, Cape Elizabeth, Cumberland, Falmouth, Freeport, Harpswell, Portland, S. Portland, Yarmouth.

Region 2

Alna , Arrowsic, Augusta, Bath, Boothbay, Boothbay Harbor, Bowdoinham, Chelsea, Dresden, Edgecomb, Farmingdale, Gardiner, Georgetown, Hallowell, Newcastle, Perkins Township, Pittston, Phippsburg, Randolph, Richmond, Southport, Topsham, West Bath, Westport, Wiscasset, Woolwich.

Region 3

Bristol, Bremen, Cushing, Damariscotta, Friendship, Monhegan, Nobleboro, South Bristol, South Thomaston, St. George, Thomaston, Waldoboro, Warren.

Region 4

Bangor, Belfast, Blue Hill, Brewer, Brookline, Brooksville, Bucksport, Camden, Castine, Deer Isle, Frankfort, Hampden, Isle au Haut, Islesboro, Lincolnville, Matinicus Isle Plt., Mussel Ridge, North Haven, Northport, Orland, Orrington, Owls Head, Penobscot, Prospect, Rockland, Rockport, Searsport, Sedgewick, Stockton Springs, Stonington, Surry, Verona, Vinalhaven, Winterport.

Region 5

Bar Harbor, Cherryfield, Columbia, Cranberry Isle, Ellsworth, Franklin, Gouldsboro, Hancock, Harrington, Lamoine, Long Island Plantation, Milbridge, Mt. Desert, Sorento, Southwest Harbor, Steuben, Sullivan, Swan's Island, T7SD, T8SD, T9SD, T10SD, Tremont, Trenton, Winter Harbor.

Region 6

Addison, Beals, Calais, Centerville, Columbia Falls, Cutler, Dennysville, E. Machias, Eastport, Edmunds, Jonesboro, Jonesport, Lubec, Machias, Machiasport, Marion, Marshfield, Pembroke, Perry, Robbinston, Roque Bluffs, Trescott, Whiting, Whitneyville.

APPENDIX C

Direction and speed of winds (seasonal and average annual) at five major weather stations in Maine

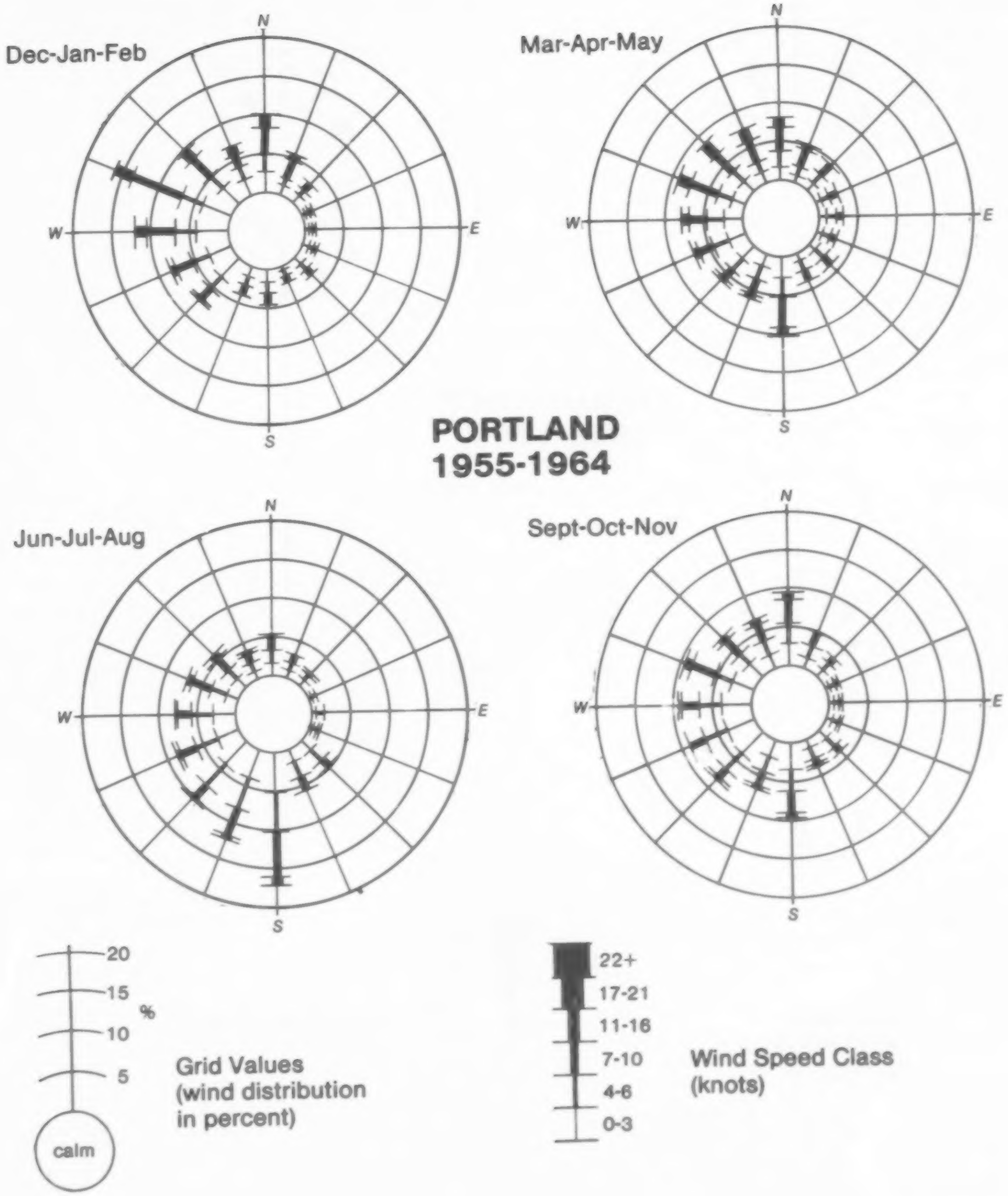


Figure C1. Direction and speed of seasonal winds at Portland.

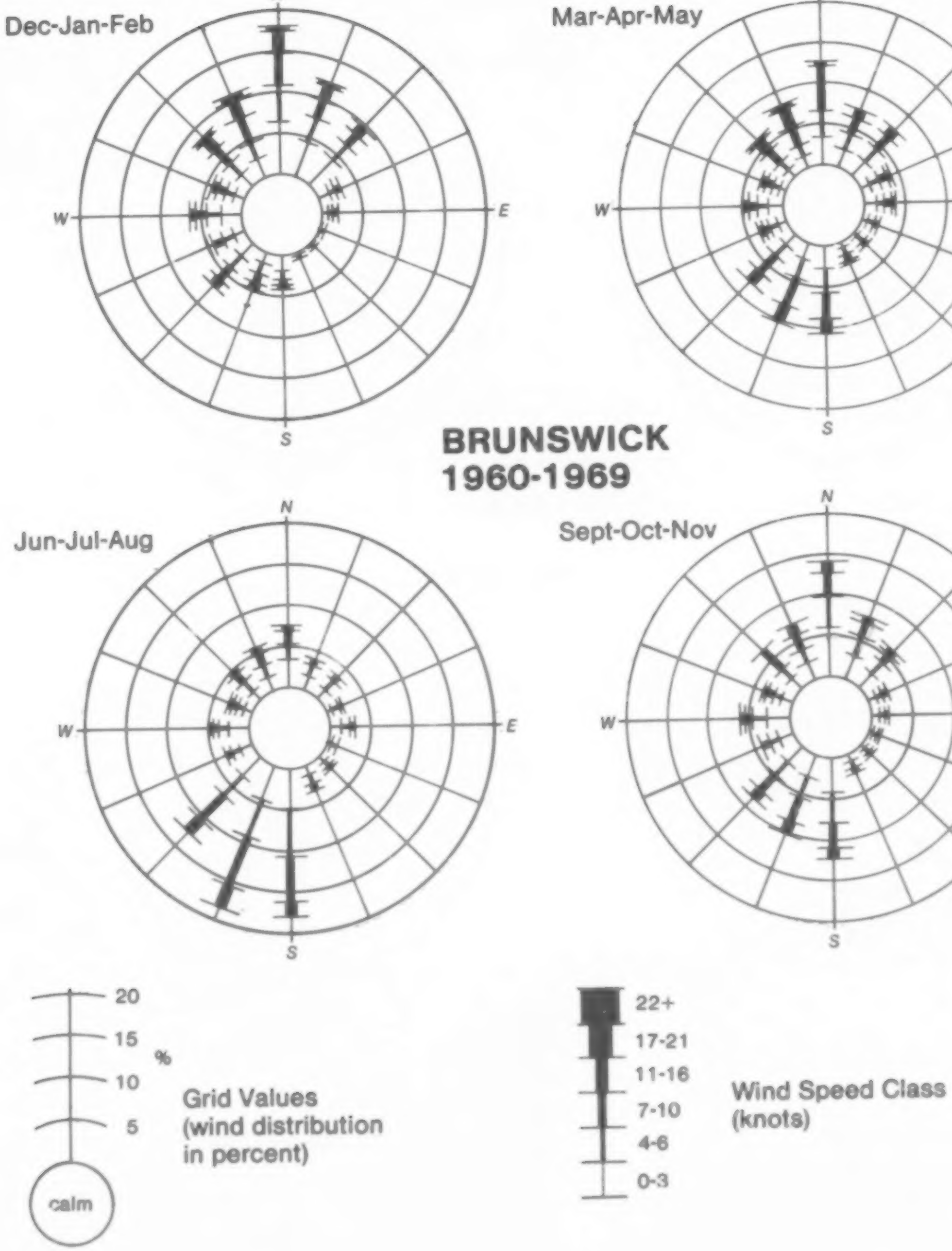


Figure C2. Direction and speed of seasonal winds at Brunswick.

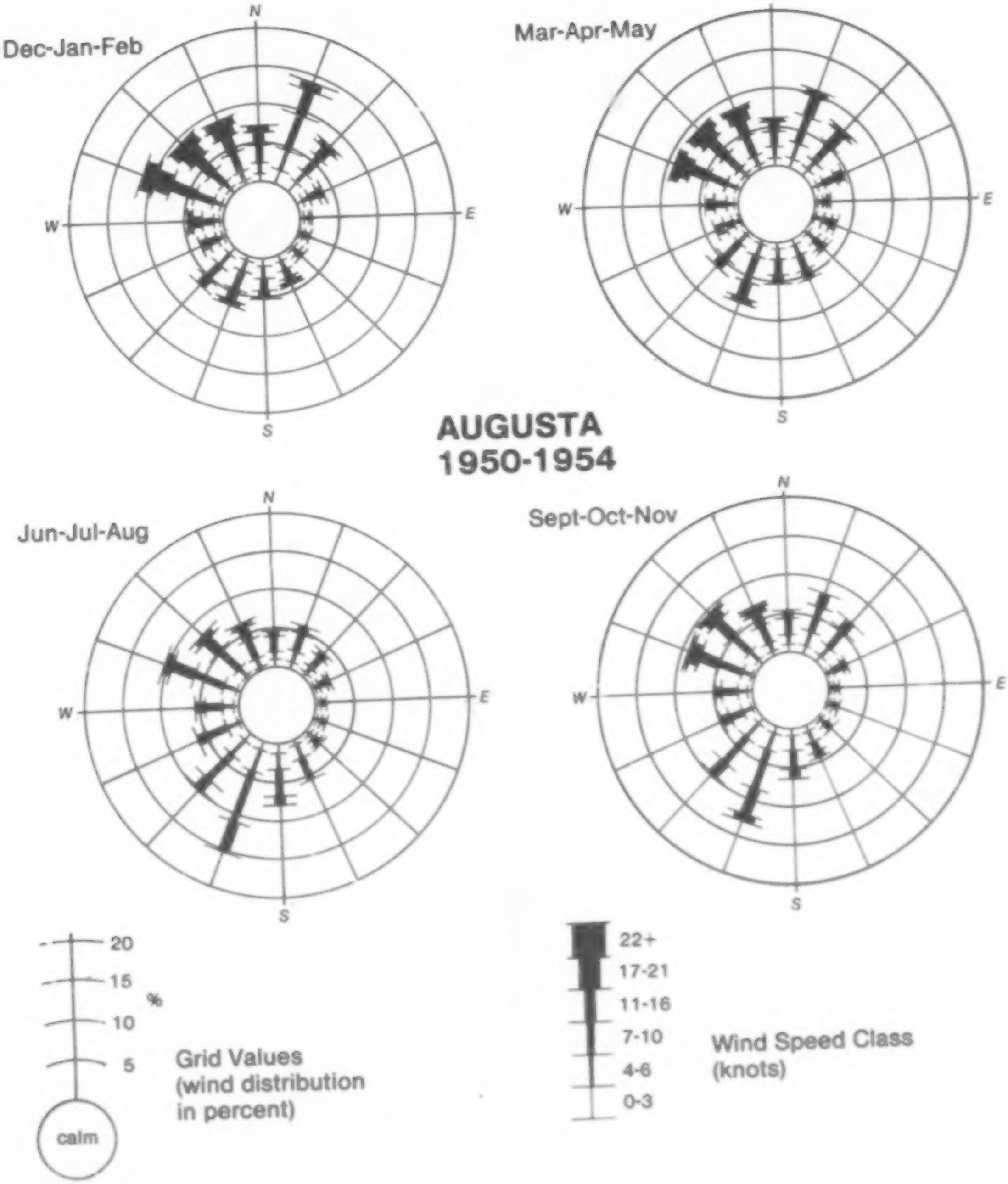


Figure C3. Direction and speed of seasonal winds at Augusta.

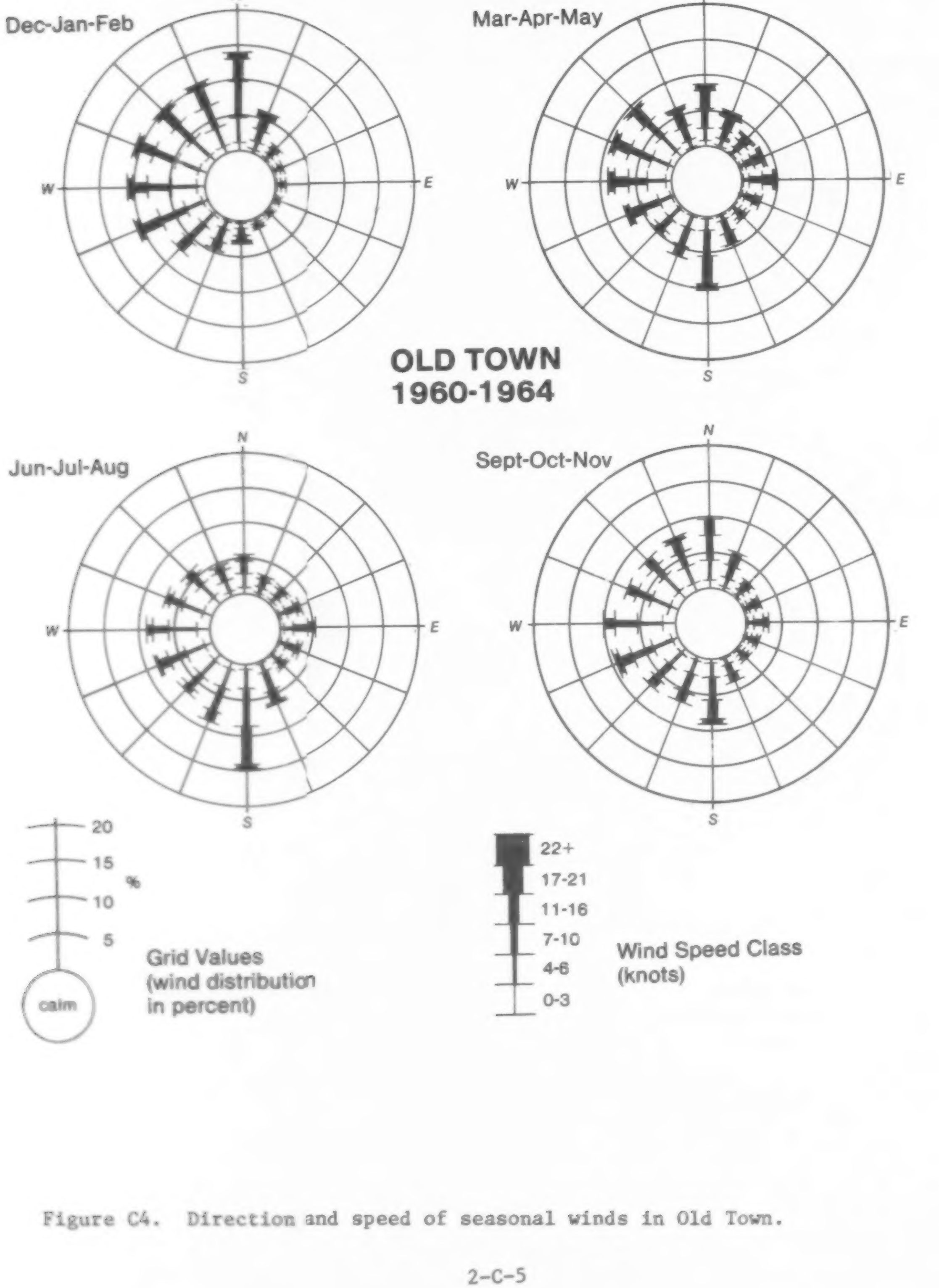


Figure C4. Direction and speed of seasonal winds in Old Town.

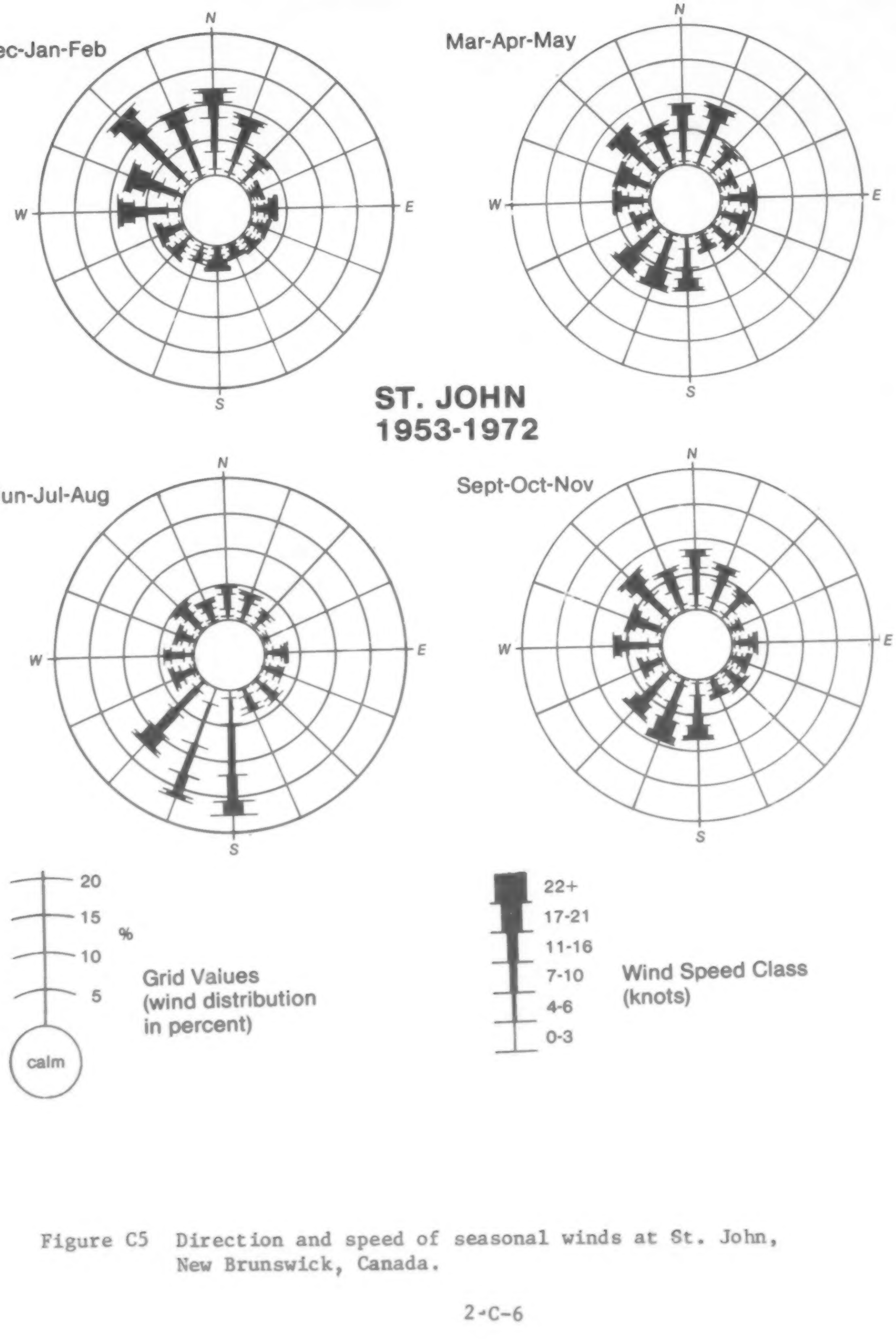


Figure C5 Direction and speed of seasonal winds at St. John, New Brunswick, Canada.

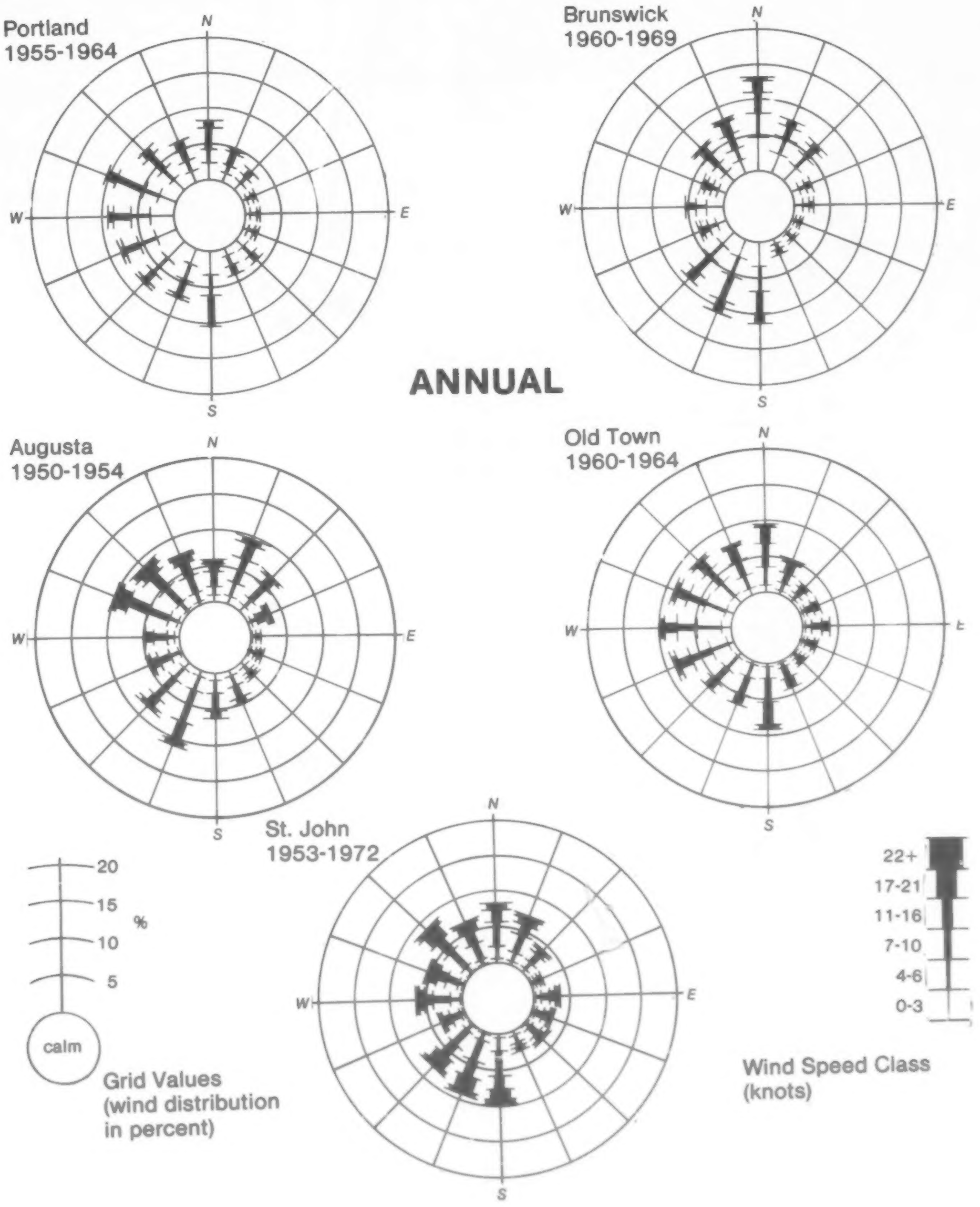


Figure C6. Annual average wind statistics for the five major stations.

APPENDIX D

Geology of the Characterization Area by Region

Although the basic geologic framework of the Maine coast within the characterization area originated from similar tectonic, glacial and post-glacial processes from a broad, regional standpoint, significant variations do occur from region to region.

The regional differences are described below on a more detailed basis than the general presentation describing the role of geology in the ecosystem of the characterization area. The regional descriptions cover bedrock, surficial, marine and hydrologic geology, as well as soils.

Region 1 (Cape Elizabeth to Cape Small)

Bedrock Geology:

The coastal lowland tracts of Region 1 is dominated by steeply dipping (almost vertical) metamorphic schists and gneisses cut by high angle faults. Local intrusion of granitic igneous rocks occur in Portland and Westbrook (Hussey and Pankiwskyj, 1975).

The structural grain of the bedrock trends northeast - southwest, controlling the bedrock surface topograpny and the orientation and distribution of islands and land mass peninsulas in Casco Bay. This structural trend is due to the orientation of bedrock folding and regional faults.

Six regional faults have been recognized by Hussey (1971). Five faults are high angle faults paralleling the structural grain. A thrust fault, running along the inner shore of Casco Bay, also trends northeast - southwest. These faults are most likely on the order of 140 million years old.

The rocks of this region have been defined by Hussey (1971) as belonging to the Casco Bay and Merrimack Groups (Cambro-Ordovician and Silurian Age, respectively). Significant rock types are the Spurwink Limestone (Chebeague Island and South Portland) and the rusty schists of the Cushing Formation which imparts significant amounts of iron to the groundwater.

The Merrimack Group lies inland from Casco Bay and is intruded by granitic plutons. Granite is actively mined from one small plutonic body on the Westbrook - Portland line (Blue Rock Industries) and these small granite bodies are presently being studied as potential underground petroleum storage facilities.

Surficial Geology:

Region 1 is dominated by an areal coverage of marine sands and silty clays of the Presumpscot Foramtion. The marine sediment covers 70% of the area, occurring as relatively thick (up to 100 feet) deposits at low elevations.

(Continued)

Upland elevations are covered with thin tills or ledge is exposed (Thompson, unpublished).

Coarser glacio-fluvial surficial deposits occur along the northwestern margin of the region (ice-contact sand and growth deposits) and in the Androscoggin River Valley (outwash sands). Ice-contact deposits may occur buried beneath marine clay valley fills such as an esker that extends southwest from the Androscoggin River into South Freeport (Gerber, 1979).

Soils:

The soils of this region are dominated by loamy and clayey soils developed on the marine clays. These soils include: Adams, Buxton, Scantic, Lyman, Peru and Histosols. Poorly developed soils on bare ledge occur in ridge tops, while sandy soils (Colton) and wet organic soils overly outwash and ice-contact surficial deposits (U.S.D.A., 1967).

Marine Geology:

The marine geology of Region 1 is dominated by Casco Bay, a wave-dominated neutral embayment. Several fine-grained estuaries lie along the landward margin of the Bay (Cousins, Fore and Harraseeket Rivers) (Timson, in press). The Royal and Presumpscot Rivers are delivering sediment to this basin at a high enough rate so that their estuarine environments can be considered as deltas although substantial portions of these deltaic (estuarine) environments are sub-aqueous.

Sedimentation rates within Casco Bay are variable, probably from 0 to 2.8 cm/yr (Schnitker, 1974). S. D. Warren (1974) has measured suspended sediment concentrations of the Presumpscot River. These concentrations vary from .5 to 40 mg/1, the later figure occurring during spring freshets. Timson (unpublished data) found that much of this sediment input from rivers was deposited within the estuary or just outside of the estuary's mouth in the inner Bay. Suspended sediment from the ocean floor of the estuary's mouth in the inner Bay. Suspended sediment from the ocean floor also contributes to sedimentation within the Bay. Ocean water suspensates contribute from 2 to 6 mg/1, of sediment capable of being deposited within the Bay.

Timson (1979) reports that unconsolidated shorelines along the inner Bay margin are retreating annually at a rate of from .25 ft to 3 ft. The material eroded from these shores also serves as a contribution to material being deposited on the floor intertidal and subtidal flats of Casco Bay.

Hydrogeology:

Four major rivers drain Region 1. The Androscoggin River passes through the upper portion of the area. The Royal, Presumpscot and Fore Rivers drain the remaining and major portions of the region.

(Continued)

The Royal River has an average discharge of 7.7 cu m/sec with maximum recorded discharge over 300 cu m/sec. The Presumpscot River drains 1,528 km^2 and has an average discharge of about 25 cu m/sec and maximum flows exceeding 350 cu m/sec. The Fore River has extreme discharges of about 33 cu m/sec (U.S.G.S., 1978).

Groundwater data for Region 1 is sparse, but Caswell (1978) indicates that bedrock well yields can exceed 100 gpm in bedrock aquifers which coincide with regional bedrock faults. One apparent aquifer is a zone paralleling the Nonesuch Fault running northeast - southwest along the inner margin of Casco Bay and extending through the town of Freeport.

Gerber (1979) estimates a surface aquifer recharge rate of about 31.2 liters/sec/km^2 of exposed aquifer surface with 60% of this water transmitted through the aquifer and 40% being contributed to the bedrock groundwater.

Regions 2 and 3 (Cape Small to Port Clyde)

Bedrock Geology:

The bedrock geology of this region is exemplified by folded metamorphozed lithologies with a structural trend oriented north - south. The region is therefore dominated by north - south trending ridges, forming long peninsulas along topographic lows and may structually control the position of the coastal embayments.

The bedrock lithology of this region is less well known than that of Region 1, but contains many of the same units (Hussey and Pankiwskyj, 1975). The Casco Bay Group of Cambro - Ordovician Age underlies most of the coastal peninsulas but are replaced by different formations of equivalent age to the coast. The Friendship area is characterized more by non-rusty schists and gneisses and a metamorphorized volcanic (amphibolite). An Early Devonian sill (basalt) occurs along the coast and inland to the west of the Damariscotta River.

The bedrock terrain of the region is intruded locally by granites with the eastern interior underlain by extensive granitic rocks. The western peninsulas (Friendship and St. George) are locally intruded by gabbros and diorites, and the outer islands (Monhegan I., Matana I.) are composed of hornblende gabbros.

Along the western margin of the region, in Union and Thomaston, a marble crops out and has been mined historically for agricultural lime and for cement lime. Pegmatite lenses and pods occur inland marginal to granitic intrusions. These pegmatites have been mined principally for feldspar and mica during World War II, but are still picked over by amateur gemologists seeking quartz, beryl and tourmaline.

(Continued)

Metal mining activity has never been big in the region, but copper, zinc and nickel sulfides are reported in high concentrations in the St. George River basin (Rand 1957).

The seismicity of Regions 2 and 3 is low with a risk level estimated to be minor in the eastern portions to moderate in the coastal western portions (NOAA, 1971). Thirty two or more earthquakes have been observed within the region (Hadley and Devine, 1975). The last major earthquake in this region occured in 1979 near Wiscasset. The magnitude of this event was estimated to be 4.3 on the Richter Scale (personal communication from Walter Anderson, Maine Department of Geology, Augusta, ME; 1979).

Surficial Geology:

Regions 2 and 3 surficial deposits differ little in their distribution throughout the area. Typically, this region is dominated by thin deposits of till on topographic highs with bedrock valleys filled with variable thicknesses of marine deposits (Presumpscot Formation). Region 2 differs from Region 1 in that end moraines, ridges of till and ice-contact stratified deposits, are ubiquitous throughout the terrain. Larger ridge and ridge complexes are composed mostly of stratified deposits, while smaller ridges (washboard moraines) are covered with marine clay and consist primarily of compact glacial till. An example of a larger moraine complex consisting of stratified deposits is the moraine system running east - west in St. George and Friendship.

The outer islands of this region are essentially bare of surficial deposits, but thin tills and marine clays fill in some of the topographic lows of these islands (Caswell, 1974).

Surficial deposits are generally thin throughout the region, but range up to 100 feet thick locally (Caswell 1974 and 1977). Thick outwash deposits occur in Topsham, and inland in Whitefield and Jefferson.

The soils of Regions 2 and 3 generally consist of loamy and clayey soil associations, but are locally sandy in ice-contact surficial deposits.

Hydrogeology:

Areas of high bedrock yield are located in Topsham, Damariscotta, Wiscasset, Pemaquid and Union. Each area of high yield is associated with a high-angle thrust fault or normal fault and produces yields exceeding 50 gpm (Caswell 1974 and 1977). Other zones moderate of yield (Boothbay Harbor and South Bristol) occur, but most bedrock wells yield less than 10 gpm.

High iron content water is commonly associated with bedrock aquifer zones and heavy use of bedrock wells along the seaward tips of peninsulas (Pemaquid) produces brackish water. Several bedrock wells within Regions 2 and 3 have yielded high salt-content water. These wells apparently tap trapped marine waters which became part of the groundwater reserve during times of post-glacial submergence (Caswell 1979).

(Continued)

The surface hydrology of Regions 2 and 3 is dominated by five rivers: Kennebec, Sheepscot, Damariscotta, Medomak, and St. George Rivers.

The Kennebec River drains 7,045 km^2 and has an average discharge of 126 cu m/sec at Bingham, Maine. Extreme flows may reach 1,670 cu m/sec. In 1977, the Kennebec River discharged an average of 196 tons of suspended sediment daily (U.S.G.S., 1978).

The Sheepscot River, which is more typical of remaining rivers within the region, drains 383 km^2, has an average discharge of 6.9 cu m/sec and extreme flows of about 200 cu m/sec.

Region 4 (Port Clyde to Blue Hill Bay)

Bedrock Geology:

The bedrock geology of Region 4 marks the transition from one of dominant structural control by folded and faulted metamorphic rocks to a terrain dominanted by igneous plutonic intrusions - the transition occurs in the vicinity of Penobscot Bay.

The terrain west of the Bay, including that which underlies the Isleboro Islands, is dominated by Ordovician and Silurian non-rusty schists, metamorphozed volcanic rocks and non-metamorphozed volcanic rocks dominated by tuffs and rhyolites. These rocks, primarily of Devonian and Silurian Age form ring-dike complexes where volcanic rocks surround the granitic intrusions in concentric plan.

Numerous quarrys were established on coastal areas and islands with granite intrusion because of handy water transport access to the building stone. Of note are building stone granite quarrys on Hurricane and Vinalhaven Islands.

Metal sulfide mining has also been active in this region. Although the last remaining copper mine closed in 1977 (Blue Hill, Maine), activity in this region has been moderate, apparently because of mineralization associated with metamorphism of volcanic rocks adjacent to granitic intrusion bodies.

Seismically, Region 4 has historically been less active than Region 1, 2 or 3 as far as magnitude of events. Approximately sixteen recorded seismic events have occured in this area of magnitude I or greater since 1766. One event of magnitude V occured in Winterport in 1938. All other events were of lower intensity. Rand and Gerver (1976) report a remobilization of a fault plane in Sears Island due to glacial loading or unloading. This event occured approximately 56,000 years ago and resulted in a traceable movement of rocks at the surface of about 2 to 3 cm. Thompson (1979) has found evidence for a similar remobilization along the Norumbega Fault Zone which runs through the northern part of the region.

(Continued)

Surficial Geology:

The surficial geology of Region 4 is similar to that of Region 3 - dominated by thin tills on bedrock highs with valley infillings of marine sediments. Because the terrain is dominated by granitic intrusives which underly the resistant topographic highs, the tills tend to be bouldery and of coarser texture than the tills further to the southwest (Thompson 1978).

End moraines are not as prevalent in number over the terrain in Region 4, but these features also tend to be coarser than their southern counterparts and also tend to contain a high percentage of boulder particles.

Ice-contact deposits (kames, eskers, and small deltas) are local, but a large concentration of these deposits occurs in Belfast, Searsport and Stockton Springs.

The soils of Region 4 are loamy and clay soils. Peru, Lyman, and Scantic soils are common on the mainland on low elevation surfaces, while poorly developed organic soils and bare ledge are common on the outer islands and higher coastal mountains.

Marine Geology:

The Penobscot River estuary, the largest fine-grained estuary along the Maine coast dominates the marine and estuarine environments of this area. The Bagaduce River estuary is the only other sizeable estuary within the region, which, because of its strong topographic and bathymetric relief, is dominated by subtidal marine systems of shallow wave-dominated platforms and deeper tidal-current dominated channels.

Intertidal areas not associated with the estuarine systems are a part of wave-dominated or tide-dominated embayment systems. These systems are composed primarily of subtidal and intertidal sand and mud flats, aquatic beds, tidal channels and ledge environments.

The sediments of the lower Penobscot estuary have been studied by Ostericher (1965), Hathaway (1972).and Folger (1972 a & b). Folger (1972 a) characterizes the basin as one of high tidal range and relatively small sediment input coupled with high current velocities throughout most of the estuary ($>$ 100 cm/sec) and vigorous wave action. The resultant of these conditions is a sediment distribution which coarsens from the basin channel laterally to the upland margins and down estuary. Clays occur throughout the deeper portions of the upper lower estuary and coarsens to silt between Rockland and Vinalhaven. Medium to fine sand covers the bay bottom south of Rockland. Coarse sand and gravels exist close to the shoreline and at the mouths of small bays off Penobscot Bay.

Cores penetrating surface sediments indicate that in the upper regions of the lower Bay, clay grades down to sand; in the mid-portions, clay predominates from the surface to at least depths of three meters; silt or fine sands to fine silts at depths in the lower Bay (Ostericher 1965).

(Continued)

Organic carbon content decreases with increasing grain-size. Maximum values of 2.1% organic content were found by Folger (1972 a) in the estuarine clays, while values of 0.5% were found in sand-sized sediments.

Ross (1967) has delineated the areal distribution of sediments delivered to the shallow inshore by the Penobscot River on the basis of the presence and abundance of amphiboles in the sand fraction of the sediments. Sediment is dispersed in a fan-like pattern from the mouth of the river. The dispersed fan extends as far south as Isle au Haut and as far east as Mount Desert Island. Although this dispersal pattern contradicts a southwest drift flow along the Maine coast, no reason for the anomolous distribution has been offered.

Hydrology:

The Penobscot River drains 17,280 km^2 with an average discharge of 335 cu m/sec and extremes exceeding 4330 cu m/sec. Peak discharge occurs in late April or early May. On the average, the Penobscot delivers 242 tons of suspended sediment daily to Penobscot Bay in concentrations of approximately 11 mg/l (U.S.G.S. 1978).

Bedrock wells in the region yield an average 9 gpm (Prescott 1966). Zones of high bedrock groundwater yield occur in Bucksport, Deer Isle, Belfast, Camden, Bangor and Brewer along the Penobscot River. Other areas have low yields, especially east of Penobscot Bay where granitic rocks are common. Bedrock wells in Verona yield high iron content water.

Surface wells are common in Region 4 as rural areas dominate. High yields can be expected in the ice-contact eskers in Waldo, Penobscot and Hancock Counties, while lower yields are to be expected in most other areas.

Region 5 (Blue Hill Bay to Addison)

Bedrock Geology:

Large granite plutons dominate the geology of Hancock County. The two most prominent topographic features of the region, Mt. Desert and Tunk Mtn. are ring-dike complexes of central granite rocks surrounded by other intrusives. Metamorphozed volcanics occur in the lowlands, but the entire region is underlain mostly by plutonic rocks.

Schists, slates and metasandstones of Cambro-Ordovician Age occupy land areas in between ring-dike complexes, and these rocks are metamorphozed more strongly locally adjacent to the igneous complexes.

Region 5 is less seismically active than the remainder of the coast--only two seismic events have originated within the region since 1766, both events were below magnitude II (Bloxsom 1975). Only two major faults have been mapped in the Region (Hussey 1972). These faults have cut through Cambro-Ordovician slates in a northeasterly direction just above Ellsworth.

(Continued)

Surficial Geology:

Because of its underlying igneous bedrock terrain and relatively rugged relief, Region 5 is characterized by surficial deposits of ground moraine (till) covered sporadically with small, discontinuous bouldering moraine deposits.

In the northern part of the region, however, larger end moraines and ice-contact deposits left on the surface of the interior lowlands have created a dammed topography which has allowed thick peat deposits (up to 25 feet deep) to accumulate (Cameron 1978). Small peat and swamp deposits occur locally along the coast (Timson 1978).

The soils of this region are clayey, loamy or non-existent.

Marine Geology:

Sedimentation along this portion of the coast has occured primarily subtidally owing to the relatively deep bathymetry. A number of fine-grained estuaries occur in the regions (Union River, Narraguagus River estuaries), but little investigation in these estuaries has taken place, particularly with respect to sedimentation rates. Sedimentation rates within these estuaries and the neutral tide-dominated or wave-dominated basins into which the estuaries flow is low owing to the low topography which the rivers drain and the presence, from Franklin Bay - east, of algal mats in the intertidal flats which would be smothered by moderate sedimentation (Timson, in press).

Of note within this region is the only fjord in the eastern seaboard of America - Somes Sound. The fjord lies along the southwest border of Mt. Desert.

Hydrology:

The Union and Narraguagus Rivers are the major rivers draining Region 5. The Narraguagus River drains 601 km^2 of terrain with an average discharge of 14.02 cu m/sec and extremes of 295 cu m/sec. The Union River (Ellsworth) drains 383 km^2 of terrain along the eastern border of the region with an average discharge of 7.6 cu m/sec with extremes of 117 cu m/sec, (U.S.G.S. 1978). No sediment discharge rates are available for these rivers.

Groundwater data for Region 5 indicates that bedrock yields are less than in other regions (Caswell and Lanctot 1975). This probably results from the igneous nature of the bedrock but also from the sparseness of well data.

Higher than normal bedrock yields do occur in Cherryfield, Bass Harbor, and Southwest Harbor.

Wells tapping surface groundwater are common in local ice-contact sand and gravel deposits, particularly in the eastern portions of the region.

(Continued)

Well yield in these deposits or from bedrock underlying these gravel aquifers is high, averaging 11 gpm (Prescott 1974). The groundwater table averages about 12 feet below ground surface elevations (Prescott]974).

Region 6 (Cherryfield to Calais)

Bedrock Geology:

Washington County is underlain by a series of volcanic rocks intruded locally by granitic and gabbroic intrusions. These Silurian and Devonian volcanic rocks represent remanants of a chain of volcanic centers in this area. The volcanic rocks are poorly metamorphozed flow breccias, tuff breccia and tuffs and are interbedded locally with sandstones, siltstones and basalt flows (Gates 1969).

Structurally, the region has been folded, faulted and intruded in Middle Devonian time, and faulted extensively later during Carboniferous and Triassic Times. The structural trend, like much of the raminder of the Maine coast, is northeast - southwest, but several mapped faults trend northwest - southeast. A large fault with this trend is inferred to run along the St. Croix River estuary basin.

Seismically, Region 6 has exhibited a history of being much more active than Region 5 (Bloxsom, 1975), especially along a northwest - southeast trending belt centered on eastern Passamaquoddy Bay. Since 1766, approximately twenty seismic events have occurred in the region, including five seismic events of between magnitudes 5 and 6 and including one event over magnitude 7 (Bloxsom, 1975).

Surficial Geology:

Region 6 is dominated by an ice-contact deposit complex extending from Pineo Ridge in Cherryfield to Lubec. This complex represents a late-glacial advance which left a series of marine deltas and gravelly end moraines along the coastal region (Borns, 1978). In front of this ice stand margin, smaller moraine ridges lie on or are buried within marine clay deposits. Behind the ridge complex, sand and gravel interlobate deposits and eskers rise above the coastal lowlands, and dominate a terrain underlain by thick tills and numerous peat deposits. The eskers may be as long as 80 miles in length (Borns, 1978).

Soil associations are varied, but are dominated by the clayey Lyman-Scantic and Peru soils. Inland, and associated with the sand and gravel deposits, is the Colter-Adams-Histosols association of sandy, gravelly soils and peat deposits.

The peat deposits of southern Washington County are numerous and extensive. There are approximately twenty commercial peat deposits containing sphagnum peat within the region (Cameron, 1975). These deposits contain from 15,000 short tons to over 8,000,000 short tons of peat.

(Continued)

Marine Geology:

Region 6 has a valuable distribution of marine systems. The coastal portion from Cherryfield to Cutler are characterized by small fine-grained estuaries which empty into wave- or tide-dominated neutral embayments. The neutral embayments open onto a narrow wave-shoal platform which terminates abruptly at the 70 meter isobath where the Fundican Fault separates Paleozoic from Mesozoic rocks (Uchupi 1968).

From Cutler to Lubec, the bathymetry and shoreline topography are very steep, only a wave shoal platform extends from cliff shorelines for a few kilometers until the 70 meters isobath.

The segment from Lubec to Calais is characterized by fine-grained estuaries (St. Croix and Dennys River), wave-shoal embayments and fan deltas where streams draining the volcanic bedrock debouch onto extensive tidal falts.

Sedimentation within these systems is little understood - little data exists as to sedimentation rates. Fink (1975) found suspended sediment concentrations in the St. Croix river to vary between 4 and 22 milligrams per liter.

Investigations by EG&G (1973) and the U.S. Army Corps of Engineers (International Joint Commission 1959) indicate about 13 meters of estuarine sands, silts and clays infill the Cobscook Bay embayment, indicating about 1 mm of deposition annually in the channels, a slow rate of deposition compared to the southwestern regions of the characterization area.

Much of the sediment source for the intertidal deposits is derived from wave erosion of shoreline banks. Shoreline retreat of up to 1 meter annually has been noted by Timson and Kale (1977) along the Machias and Cutler shorelines.

Hydrology:

Several rivers drain or run through region 6. The major river is the St. Croix River. Discharge of the St. Croix is a mean annual rate of 76.2 cu m/sec with peak flows averaging above 600 cu m/sec. The river delivers approximately 67 tons of suspended sediment daily to the estuary in concentration averaging about 8.8 mg/l (U.S.G.S. 1978).

The Machias River is the next largest river draining Region 6. The Machias drains 1184 km^2 with average discharges of 26 cu m/sec and extremes exceeding 420 cu m/sec.

The Dennys River is representative of small rivers draining the region. The Dennys drains only 239 km^2 with an average discharge of 5.4 cu m/sec and extremes only reaching 111 cu m/sec.

(Continued)

The groundwater hydrology of Region 6 is similar to Region 5. Bedrock wells yield an average of 10 gpm from a water table which averages 10.6 feet below the ground level (Prescott 1974). The ice-contact deposits are all favorable groundwater aquifers, delivering more than 50 gpm. They also act as recharge areas for bedrock groundwater. There are few areas which exhibit favorable bedrock yields, but there is too little data to confirm the absence of bedrock aquifer zones (Caswell and Lanctot 1975). Since most wells in this region are dug wells, there is a potential for well water salt contamination by aerial pesticides which travel rapidly through gravel deposits (Caswell 1978).

CHAPTER 3

Table A1. Licensed Municipal Dischargers by Characterization Region

Town	Discharger	Receiving waterbody
Region 1		
Brunswick	Brunswick Sewer District	Androscoggin River
Cape Elizabeth	Town of Cape Elizabeth	Spurwink River
Cape Elizabeth	Town of Cape Elizabeth	Cape Elizabeth Harbor
Falmouth	Town of Falmouth	Falmouth Estuary
Freeport	Freeport Sewerage District	Hanaseeket Estuary
Portland	City of Portland	Stroudwater River
Portland	Portland Water District (Westbrook)	Presumpscot River
S. Portland	City of S. Portland	S. Portland Harbor
Yarmouth	Town of Yarmouth	Royal River
Region 2		
Augusta	Augusta Sanitary District	Kennebec River
Bath	City of Bath	Kennebec River
Boothbay Harbor	Boothbay Harbor Sewer District	Boothbay Harbor Estuary
Richmond	Richmond Utilities District	Kennebec River
Wiscasset	Town of Wiscasset	Sheepscot River
Region 3		
Waldoboro	Waldoboro Sewer District	Medomak River
Thomaston	Town of Thomaston	St. George Estuary
Region 4		
Bangor	City of Bangor	Penobscot River
Belfast	City of Belfast	Belfast Harbor
Bluehill	Town of Bluehill	Bluehill Bay
Brewer	City of Brewer	Penobscot River
Camden	Town of Camden	Camden Harbor
Camden	Town of Camden	Camden Harbor
Castine	Town of Castine	Castine Estuary
Rockland	City of Rockland	Rockland Estuary
Region 5		
Bar Harbor	Town of Bar Harbor	Bar Harbor Estuary
Ellsworth	City of Ellsworth	Union River
Northeast Harbor	Town of Mt. Desert	Mt. Desert Estuary
Southwest Harbor	Town of Southwest Harbor	Southwest Harbor
Winter Harbor	Town of Winter Harbor	Henry Cove
Region 6		
Calais	City of Calais	St. Croix River
Machias	Town of Machias	Machias River Estuary
Perry	Passamaquoddy Housing Authority	Perry Estuary

Table A2. Licensed Industrial Waste Water Discharges, By Region

Town	Discharger	Effluent type	Receiving water body
Region 1			
Portland	Burt Company	Thermal	Fall Brook
Portland	Central Maine Power Company	Thermal	Portland Harbor
Portland	Cook Concrete Company	Washwater	Portland Harbor
Portland	Corenco Company	Washwater	Presumpscot River
Portland	King Resources Company	Runoff	Portland Harbor
Portland	Landsman Packing Company	Processing	Portland Harbor
Portland	Maine Fisheries Corporation	Fish Processing	Portland Harbor
Portland	Portland Company	Thermal	Portland Harbor
Portland	Portland Sebago Oil & Ice	Thermal, backwash	Portland Harbor
Portland	Thomas Beals Furniture Co.	Thermal	Portland Harbor
Portland	Webber Petroleum Company	Runoff	Portland Harbor
Portland	William Underwood Company	Thermal	Portland Harbor
S. Portland	American Oil Company	Runoff	S. Portland Harbor
S. Portland	Amoco Oil Company	Runoff	Portland Harbor
S. Portland	Astroline Petroleum Corp.	Runoff	S. Portland Harbor
S. Portland	Central Maine Power Company	Thermal	S. Portland Harbor
S. Portland	Chevron USA, Inc.	Runoff	Casco Bay
S. Portland	Exxon Company, U.S.A.	Runoff	S. Portland Harbor
S. Portland	Fairchild Semiconductor	Thermal	Long Creek Tributary
S. Portland	General Electric Company	Thermal, Proc.	S. Portland Harbor
S. Portland	Getty Refining & Marketing	Runoff	S. Portland Harbor
S. Portland	Gulf Oil Company	Runoff	Rolling Mills Pond
S. Portland	Northeast Petroleum Corp.	Runoff	Below Rolling Mills Pd.
S. Portland	Pine State By-Products		S. Portland Harbor
S. Portland	Portland Pipeline Corp.	Runoff	Anthoine Creek
S. Portland	Shell Oil Company	Runoff	S. Portland Harbor
S. Portland	Texaco Inc.	Runoff	S. Portland Harbor
Yarmouth	Days Crabmeat	Processing	Cousin's River, W. Branch
Region 2			
Augusta	Brewers Dairy, Inc.	Thermal	Kennebec River
Augusta	Edwards Manufacturing Co.	Thermal	Kennebec River
Augusta	Exxon Company, USA	Runoff	Kennebec Tributary
Augusta	Governor Hill Fish Factory	Hatchery wastewater	Spring Brook
Bath	Bath Iron Works	Thermal	Kennebec River
Farmingdale	Central Maine Power Company	Sump & Drains	Kennebec River
Gardiner	Gardiner Water District		Cobbosseecontee Stream
Gardiner	Yorktown Paper Mills of Maine		Cobbosseecontee Stream
Topsham	Pejepscot Paper	Processing	Androscoggin River
Wiscasset	Central Maine Power Company	Thermal	Sheepscot River
Wiscasset	Maine Yankee Atomic Power Co.	Thermal,Processing	Montsweag Bay

(Continued)

Table A2. Continued

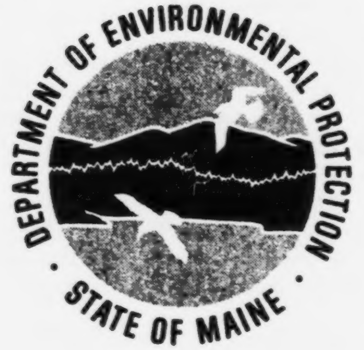
Town	Discharger	Effluent type	Receiving water body
Region 3			
Bristol	Long Island Oyster Farms, Inc.	Thermal	Muscongus Sound
Friendship	Walter Faster	Shellfish culture	Friendship Harbor
Waldoboro	GTE Sylvania, Inc.	Thermal, Processing	Medomak River
Waldoboro	Medomak Canning Company	Processing, thermal	Medomak River
Waldoboro	The Sampson Supermarket, Inc.	Thermal	Medomak River
Region 4			
Bangor	Astroline Petroleum	Runoff	Penobscot River
Bangor	Mobil Oil Corporation	Runoff	Penobscot River
Bangor	Texaco, Inc.	Runoff	Penobscot River
Bangor	Webber Oil Company	Runoff	Penobscot River
Belfast	Addison Packing Company	Fish processing	Belfast Harbor
Belfast	State Sand and Gravel Inc.		Woodstream
Blue Hill	Kenamerican Inc.	Processing	Carlton Stream
Brewer	Atlantic Terminal Corp.	Runoff	Penobscot River
Brewer	Eastern Fine Paper	Thermal, Processing	Penobscot River
Brewer	Getchel Brothers, Inc.	Thermal	Penobscot River
Brewer	Gulf Oil Company	Runoff	Penobscot River
Brewer	Webber Tanks, Inc.	Runoff	Penobscot River
Bucksport	ATC Petroleum Inc.	Runoff	Penobscot River
Bucksport	Webber Tanks, Inc.	Runoff	Penobscot River
Hampden	Chevron USA, Inc.	Runoff	Penobscot River
Orrington	IMC Chemical Group, Inc.	Processing, Thermal	Penobscot River
Prospect Harbor	Stinson Cannery Company	Fish processing	Prospect Harbor
Rockland	F. J. Ohara and Sons	Fish processing	Rockland Harbor
Rockland	Marine Colloids, Inc.	Thermal, washing	Rockland Tidewaters
Rockland	National Sea Products, Inc.	Thermal	Rockland Harbor
Rockland	Seapro, Inc.	Thermal, Fish proc.	Rockland Harbor
Rockland	Stinson Canning Company	Fish processing	Rockland Harbor
Rockland	The Mearl Corporation		Rockland Harbor
Searsport	Atlantic Terminal, Inc.	Runoff	Penobscot Bay
Searsport	Shell Oil Company	Runoff	Searsport Harbor
Stonington	Stonington Lobster Coop	Processing	Stonington Tidewater
Stonington	Stonington Packing Company	Fish processing	Stonington Harbor
Thomaston	Martin Marietta Corp.		Unnamed Tributary
Veazie	Bangor Hydro-Electric	Thermal	Penobscot River
Warren	Crowe Rope Company	Thermal	St. George River
Region 5			
Bass Harbor	C. H. Rich Company	Shrimp/fish proc.	Tremont Harbor
Cherryfield	A. L. Stewart and Sons, Inc.		Narraguagus River
Cherryfield	Deblois Fish Hatchery	Hatchery wastewater	Bog Stream
Cherryfield	Deblois Rearing Pools	Hatchery wastewater	Bog Stream

(Continued)

Table A2. Concluded

Town	Discharger	Effluent type	Receiving water body
Region 5 (cont.)			
Ellsworth	Sport Fisheries and Wildlife		Reid Brook .
Milbridge	Jasper Wyman and Son	Processing	Narraguagus River
Milbridge	L. Ray Packing Company	Fish processing	Narraguagus River
Milbridge	Quoddy Bay Packing Company	Fish processing	Lubec Harbor
Southwest Har.	Addison Packing Company	Fish processing	Southwest Harbor
Region 6			
East Machias	Bangor Hydroelectric Company	Thermal	E. Machias River
Eastport	Mearl Corporation	Fish proc., thermal	Eastport Tidewaters
Lubec	Consolidated Foods Corp.	Fish Processing	Lubec Harbor
Lubec	McCurdy Fish Company	Fish Processing	Lubec Narrows
Lubec	R. J. Peacock Canning Company	Fish Processing	Lubec Harbor
Lubec	Stinson Canning Co., Lubec Div.	Fish Processing	Lubec Harbor
Lubec	USA Fish, Inc.	Fish Processing	Lubec Tidewaters
Machias	Deering Milliken, Inc.	Thermal	Machias River
Machias	N.F. and J.C. Schoppee, Inc.	Thermal	Machias River

Classification of Surface Waters


DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF MAINE

October 1977

Maine Revised Statutes Annotated
Title 38
Chapter 3

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Ray Building
Augusta Mental Health Institute Complex
Augusta, Maine 04333

OFFICE OF THE COMMISSIONER

BUREAU OF WATER QUALITY CONTROL

REVISIONS 108th REGULAR SESSION 1977

1. Page 5 Section 363 Class A fecal coliform reduced from 100 to 20 and a no discharge provision added.
2. Page 5 Section 363 Class B-1 total coliform deleted.
3. Page 6 Section 363 Class B-2 total coliform deleted.
4. Page 6 Section 363 Class C total coliform deleted.
5. Page 7 Section 363-A Great Ponds Classification Standards added.
6. Page 8 Section 364 Class SA fecal coliform reduced from 15 to 14 and from 50 to 43.
7. Page 9 Section 364 Class SB-1 fecal coliform reduced from 15 to 14 and from 50 to 43.
8. Page 10 Section 364 Class SB-2 fecal coliform reduced from 15 to 14 and from 50 to 43.
9. Page 13 items 3, 12 and 15 upgraded from "C" to "B-2".
10. Page 14 items 5, 3 and 5 upgraded from "C" to "B-2".
11. Page 15 items 6, 5, 8 and 14 upgraded from "C" to "B-2", item 14-A added.
12. Page 17 items 2, 3, 4, 12 and 14 upgraded from "C" to "B-2"; items 6 and 9 upgraded from "B-2" to "B-1"; and item 12 upgraded from "C" to "B-1".
13. Page 18 item 1-A added.
14. Page 20 item 3 upgraded from "C" to "B-2".
15. Page 23 items 13 and 14 upgraded from "C" to "B-2".
16. Page 23 items 3, 5, 7, 8 and 10 upgraded from "C" to "B-2".
17. Page 30 item 2 upgraded from "C" to "B-2" and 3 added.
18. Page 31 item 13 upgraded from "C" to "B-2".
19. Page 33 items 2A and 2B upgraded from unclassified to "C" and 2E from "C" to "B-1".
20. Page 55 Section 371 repealed and 371-A added.
30. Page 56 Regulations added to booklet
31. Page 57 Regulations added to booklet
32. page 58 Regulations added to booklet

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§ 363. Standards of classification of fresh waters

The board shall have 4 standards for the classification of fresh surface waters.

1972, c. 618.

Class A shall be the highest classification and shall be of such quality that it can be used for recreational purposes, including bathing, and for public water supplies after disinfection. The dissolved oxygen content of such waters shall not be less than 75% saturation or as naturally occurs, and contain not more than 20 fecal coliform bacteria per 100 milliliters.

1977, c. 373, § 1.

These waters shall be free from sludge deposits, solid refuse and floating solids such as oils, grease or scum. There shall be no disposal of any matter or substance in these waters which would impart color, turbidity, taste or odor otehr than that which naturally occurs in said waters, nor shall such matter or substances alter the temperature or hydrogen-ion concentration of these waters or contain chemical constituents which would be harmful or offensive to humans or which would be harmful to animal or acquatic life. No radioactive matter or substance shall be permitted in these waters other than that occurring from natural phenomena.

There shall be no discharge of sewage or other wastes into water of this classification and no deposits of such material on the banks of such waters in such a manner that transfer of the material into the waters is likely, except that existing licensed discharges into water of this classification will be allowed to continue until practical alternatives exist, but no new discharges will be permitted after the effective date of this section.

1971, c. 461, § 2; 1977, c. 373, § 2.

Class B, the 2nd highest classification, shall be divided into 2 designated groups as **B-1** and **B-2.**

B-1. Waters of this class shall be considered the higher quality of the Class B group and shall be acceptable for recreational purposes, including water contact recreation, for use as potable water supply after adequate treatment and for a fish and wildlife habitat. The dissolved oxygen of such waters shall be not less than 75% of saturation, and not less than 5 parts per million at any time. The fecal coliform bacteria shall not exceed 60 per 100 milliliters.

1977, c. 373, § 3.

These waters shall be free from sludge deposits, solid refuse and floating solids such as oils, grease or scum. There shall be no disposal of any matter or substance in these waters which imparts color, turbidity, taste or odor which would impair the usages ascribed to this classification nor shall such matter or substance after the temperature or hydrogen-ion concentration of these waters so as to render such waters harmful to fish or other aquatic life. There shall be no discharge to these waters which will cause the hydrogen-ion concentration or "pH" of these waters to fall outside of the 6.0 to 8.5 range. There shall be no disposal of any matter or substance that contains chemical constituents which are harmful to humans, animals or aquatic life or which adversely affect any other water use in this class. No radioactive matter or substances shall be discharged to these waters which will raise the radio-nuclide concentrations above the standards as established by the United States Public Health Service as being acceptable for drinking water. These waters shall be free of any matter or substance which alters the composition of bottom fauna, which adversely affects the physical or chemical nature of bottom material, or which interferes with the propagation of fish.

There shall be no disposal of sewage, industrial wastes or other wastes in such waters, except those which have received treatment for the adequate removal of waste constituents including, but not limited to, solids, color, turbidity, taste, odor or toxic material, such that these treated wastes will not lower the standards or alter the uasges of this classification, nor shall such disposal of sewage or waste be injurious to aquatic life or render such dangerous for human consumption.

B-2. Waters of this class shall be acceptable for recreational purposes including water contact recreation, for industrial and potable water supplies after adequate treatment, and for a fish and wildlife habitat. The dissolved oxygen of such waters shall not be less than 60% of saturation, and not less than 5 parts per million at any time. The fecal coliform bacteria is not to exceed 200 per 100 millilieters.

1977, c. 373, § 4.

These waters shall be free from sludge deposits, solid refuse and floating solids such as oils, grease and scum. There shall be no disposal of any matter or substance in these waters which imparts color, turbidity, taste or odor which would impair the usages ascribed to this classification, nor shall such matter or substance alter the temperature or hydrogen-ion concentration of the waters so as to render such waters harmful to fish or other aquatic life. There shall be no disposal of any matter or substance that contains chemical constituents which are harmful to humans, animal or aquatic life, or which adversely affect any other water use in this class. There shall be no discharge to these waters which will cause the hydrogen-ion concentration of "pH" of these waters to fall outside of the 6.0 to 8.5 range. No radioactive matter or substance shall be discharged to these waters which will raise the radio-nuclid concentrations above the standards as established by the United States Public Health Service as being acceptable for drinking water. These waters shall be free of any matter or substance which alters the composition of bottom fauna, which adversely affects the physical or chemical nature of bottom material, or which interferes with the propagation of fish.

There shall be no disposal of sewage, industrial wastes or other wastes in such waters except those which have received treatment for the adequate removal of waste constituents including, but not limited to, solids, color, turbidity, taste, odor or toxic material, such that these treated wastes will not lower the standards or alter the usages of this classification, nor shall such disposal of sewage or waste be injurious to aquatic life or render such dangerous for human consumption.

Class C. waters, The 3rd highest classification, shall be of such quality as to be satisfactory for recreational boating and fishing, for a fish and wildlife habitat and for other uses except potable water supplies and water contact recreation, unless such waters are adequately treated.

The dissolved oxygen content of such waters shall not be less than 5 parts per million, except in those cases where the board finds that the natural dissolved oxygen of any such body of water falls below 5 parts per million, in which case the board may grant a variance to this requirement. In no event shall the dissolved oxygen content of such waters be less than 4 parts per million. The fecal coliform bacteria is not to exceed 1,000 per 100 milliliters.

1973, c. 423, § 5; 1977, c. 373, § 5.

These waters shall be free from sludge deposits, solid refuse and floating solids such as oils, grease or scum. There shall be no disposal of any matter or substance in these waters which imparts color, turbidity, taste, or odor which would impair the usages ascribed to this classification, nor shall such matter or substance alter the temperature or hydrogen-ion content of the waters so as to render such waters harmful to fish or other aquatic life. There shall be no discharge to these waters which will cause the hydrogen-ion concentration or "pH" of these waters to fall outside of the 6.0 to 8.5 range. There shall be no disposal of any matter or substance that contains chemical constituents which are harmful to humans, animal or aquatic life or which adversely affect any other water use in this class. No radioactive material or substance shall be discharged to these waters which will raise the radio-nuclide concentration above the standards as established by the United States Public Health Service as being acceptable for drinking water.

There shall be no disposal of sewage, industrial wastes or other wastes in such waters, except those which have received treatment for the adequate removal of waste constituents including, but not limited to, solids, color, turbidity, taste, odor or toxic material, such that these treated wastes will not lower the standards or alter the usages of this classification, nor shall such disposal of sewage or waste be injurious to aquatic life or render such dangerous for human consumption.

Class D waters shall be assigned only where a higher water classification cannot be attained after utilizing the best practicable treatment or control of sewage or other wastes.

Waters of this class may be used for power generation, navigation and industrial process waters after adequate treatment.

Dissolved oxygen of these waters shall not be less than 2.0 parts per million. The numbers of coliform bacteria allowed in these waters shall be only those amounts which will not, in the determination of the Commission, indicate a condition harmful to the public health or impair any usages ascribed to this classification.

These waters shall be free from sludge deposits, solid refuse and floating solids such as oils, grease or scum. There shall be no disposal of any matter or substance in these waters which imparts color, turbidity, taste or odor which would impair the usages ascribed to this classification, nor shall such matter or substance alter the temperature or hydrogen-ion concentration of the waters to impair the usages of this classification. There shall be no disposal of any matter or substance that contains chemical constituents which are harmful to humans or which adversely affect any other water use in this class. No radioactive matter or substance shall be permitted in these waters which would be harmful to humans, animal or aquatic life and there shall be no disposal of any matter or substance which would result in radio-nuclide concentrations in edible fish or other aquatic life thereby rendering them dangerous for human consumption.

There shall be no disposal of sewage, industrial wastes or other wastes in such waters, except those which have received treatment for the adequate removal of waste constituents including, but not limited to, solids, color, turbidity, taste, odor or toxic material, such that these treated wastes will not lower the standards or alter the usages of this classification. Treated wastes discharging to these waters shall not create a public nuisance as defined in Title 17, Section 2802, by the creation of odor producing sludge banks and deposits or other nuisance conditions.

With respect to all classifications hereinbefore set forth, the board may take such actions as may be appropriate for the best interests of the public, when it finds that any such classification is temporarily lowered due to abnormal conditions of temperature or stream flow.

R.S. 1954, c. 79, § 2; 1955, c. 425, § 5; 1959, c. 295, § 2; 1961, c. 305, § 3; 1963, c 274, § 1; 1967, c. 475, § 4; 1969, c. 431, §§ 1, 2; 1972, c. 618.

§ 363-A. Standards of classification of great ponds

The board shall have 2 standards for the classification of great ponds.

Class GP-A shall be the highest classification and shall be of such quality that it can be used for recreational purposes, including bathing, and for public water supplies after disinfection. Such waters shall have a Secchi disk transparency of not less than 2.0 meters or as naturally occurs, and contain not more than 20 fecal coliform bacteria per 100 milliliters. Total phosphorus concentration shall not exceed 15 parts per billion, and chlorophyll A concentration shall not exceed 8 parts per billion as measured in samples taken at or near the surface of the water.

These waters shall be free from sludge deposits, solid refuse, floating solids, oils, grease and scum. No radioactive matter or substance shall be permitted in these waters other than that occurring from natural phenomena.

There shall be no discharge of sewage or other wastes into waters of this classification except as provided in section 371-A and no deposits of materials on the shores or banks thereof in a manner that could permit drainage or leaching from the material into the waters.

Class GP-B, the 2nd highest classification, shall be acceptable for recreational purposes, including water contact recreation, for use as potable water supply after adequate treatment, and for a fish and wildlife habitat. The fecal coliform bacteria count is not to exceed 60 per 100 milliliters. The total phosphorus concentration shall not exceed 50 parts per billion as measured in samples taken at or near the surface of the water.

These waters shall be free from sludge deposits, solid refuse and floating solids, such as oils, grease or scum. There shall be no disposal of any matter or substance in these waters which imparts color, turbidity, taste or odor which would impair the usages ascribed to this classification nor shall such matter or substance alter the temperature or hydrogen-ion concentration of these waters so as to render such waters harmful to fish or other aquatic life. There shall be no discharge to these waters which will cause the "pH" of these waters to fall outside of the 5.5 to 8.5 range. There shall be no disposal of any substance that contains chemical constituents which are harmful to humans, animals or aquatic life or which adversely affect any other water use in this class. No radioactive matter or substances shall be discharged to these waters which will raise the radio-nuclide concentrations above the standards established by the United States Public Health Service as being acceptable for drinking water. These waters shall be free of any matter or substance which alters the composition of bottom fauna, which adversely affects the physical or chemical nature of bottom material, or which interferes with the propagation of fish.

There shall be no disposal of sewage, industrial wastes or other wastes in such waters, except those which have received treatment for the adequate removal of waste constituents, including, but not limited to, solids, color, turbidity, taste, odor and toxic material, such that these treated wastes will not cause any violation of water quality standards or alter the usages of this classification, nor shall such disposal of sewage or waste be injurious to aquatic life or cause it to be dangerous for human consumption. There shall be no additional discharge of phosphorus to waters of this classification, which discharge does not employ the best available technology for phosphorus removal.

1977, c. 373, § 6.

§ 364. Tidal or Marine Waters

The board shall have 5 standards for classification of tidal waters.

1971, c. 470, § 2; 1972, c. 618.

Class SA, shall be suitable for all clean water usages, including water contact recreation, and fishing. Such waters shall be suitable for the harvesting and propagation of shellfish and for a fish and wildlife habitat. These waters shall contain not less than 6.0 parts per million of dissolved oxygen at all times. The median numbers of coliform bacteria in any series of samples representative of waters in the shellfish growing area or non-shellfish growing area shall not be in excess of 70 per 100 milliliters, nor shall more than 10% of the samples exceed 230 coliform bacteria per 100 milliliters. The median numbers of fecal coliform bacteria in any series of samples representative of waters in the shellfish growing area or non-shellfish growing area shall not be in excess of 14 per 100 milliliters, nor shall more than 10% of the samples exceed 43 fecal coliform bacteria per 100 milliliters.

1977, c. 373, § 7.

There shall be no floating solids, settleable solids, oil or sludge deposits attributable to sewage, industrial wastes or other wastes and no deposit garbage, cinders, ashes, oils, sludge or other refuse. There shall be no discharge of sewage or other wastes, except those which have received treatment for the adequate removal of waste constituents including, but not limited to, solids, color, turbidity, taste, odor or toxic material, such that these treated wastes will not lower the standards or alter the usages of this classification, nor shall such disposal of sewage or waste be injurious to aquatic life or render such dangerous for human consumption.

There shall be no toxic wastes, deleterious substances, colored or other waste or heated liquids discharged to waters of this classification either singly or in combinations with other substances or wastes in such amounts or at such temperatures as to be injurious to edible fish or shellfish or to the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, odor or sanitary condition thereof; and otherwise none in sufficient amounts to make the waters unsafe or unsuitable for bathing or impair the waters for any other best usage as determined for the specific waters assigned to this class. There shall be no discharge which will cause the hydrogen-ion concentration or "pH" of these waters to fall outside of the 6.7 to 8.5 range.

There shall be no disposal of any matter or substances that contains chemical constituents which are harmful to humans, animal or aquatic life or which adversely affect any other water use in this class. No radioactive matter or substance shall be permitted in these waters would be harmful to humans, animal or aquatic life and there shall be no disposal of any matter or substance which would result in radio-nuclide concentrations in edible fish or other aquatic life thereby rendering them dangerous for human consumption. These waters shall be free of any matter or substance which alters the composition of bottom fauna, which adversely affects the physical or chemical nature of bottom material, or which interferes with the propagation of fish or shellfish if indigenous to the area.

Class SB-1 shall be suitable for all clean water usages including water contact recreation, and fishing. Such waters shall be suitable for the harvesting and propagation of shellfish, and for a fish and wildlife habitat. These waters shall contain not less than 6.0 parts per million of dissolved oxygen at all times. The median numbers of coliform bacteria in any series of samples representative of waters in the shellfish growing area shall not be in excess of 70 per 100 milliliters, nor shall more than 10% of the samples exceed 230 coliform bacteria per 100 milliliters. The median numbers of fecal coliform bacteria in any series of samples representative of waters in the shellfish growing area shall not be in excess of 14 per 100 milliliters, nor shall more than 10% of the samples exceed 43 fecal coliform bacteria per 100 milliliters. In a non-shellfish growing area the median numbers of coliform bacteria in a series of samples representative of the waters shall not exceed 240 per 100 milliliters, nor shall more than 10% of the samples exceed 50 coliform bacteria per 100 milliliters. In a non-shellfish growing area the median numbers of fecal coliform bacteria in a series of samples representative of the waters shall not exceed 50 per 100 milliliters, nor shall more than 10% of the samples exceed 150 fecal coliform bacteria per 100 milliliters.

1977, c. 373, § 8.

There shall be no floating solids, settleable solids, oil or sludge deposits attributable to sewage, industrial wastes or other wastes and no deposit of garbage, cinders, ashes, oils, sludge or other refuse. There shall be no discharge of sewage or other wastes, except those which have received treatment for the adequate removal of waste constituents including but not limited to, solids, color, turbidity, taste, odor or toxic material, such that these treated wastes will not lower the standards or alter the usages of this classification, nor shall such disposal of sewage or waste be injurious to aquatic life or render such dangerous for human consumption.

There shall be no toxic wastes, deleterious substances, colored or other wastes or heated liquids discharged to waters of this classification, either singly or in combination with other substances or wastes in such amounts or at such temperatures as to be injurious to edible fish or shellfish or to the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, odor or sanitary condition thereof; and otherwise none in sufficient amounts to make the waters unsafe or unsuitable for bathing or impair the waters for any other best usage as determined for the specific waters which are assigned to this class. There shall be no waste discharge which will cause the hydrogen-ion concentration or "pH" of these waters to fall outside the 6.7 to 8.5 range. There shall be no disposal of matter or substance that contains chemical constituents which are harmful to humans, animal or aquatic life or which adversely affects any other water use in this class. No radioactive matter or substance shall be permitted in these waters which would be harmful to humans, animal or aquatic life and there shall be no disposal of any matter or substance which would result in radio-nuclide concentrations in edible fish or other aquatic life thereby rendering them dangerous for human consumption. These waters shall be free of any matter or substance which alters the composition of bottom fauna, which adversely affects the physical or chemical nature of bottom material or which interferes with the propagation of fish or shellfish if indigenous to the area.

Class SB-2 shall be suitable for recreational usages, including water contact, and fishing. Such waters shall be suitable for the harvesting and propagation of shellfish, for a fish and wildlife habitat, and suitable for industrial cooling and process uses. These waters shall contain not less than 6.0 parts per million of dissolved oxygen at all times. The median numbers of coliform bacteria in any series of samples representative of waters in the shellfish growing area shall not be in excess of 70 per 100 milliliters, nor shall more than 10% of the samples exceed 230 coliform bacteria per 100 milliliters. The median numbers of fecal coliform bacteria in any series of samples representative of waters in the shellfish growing area shall not be in excess of 14 per 100 milliliters, nor shall more than 10% of the samples exceed 43 fecal coliform bacteria per 100 milliliters. In a non-shellfish growing area the median numbers of coliform bacteria in a series of samples representative of the waters shall not exceed 500 per 100 milliliters, nor shall more than 10% of the samples exceed 1,000 coliform bacteria per 100 milliliters. In a non-shellfish growing area the median numbers of fecal coliform bacteria in a series of samples representative of the waters shall not exceed 100 per 100 milliliters, nor shall more than 10% of the samples exceed 200 fecal coliform bacteria per 100 milliliters. There shall be no floating solids, settleable solids, oil or sludge deposits attributable to sewage, industrial wastes or other wastes and no deposit of garbage, cinders, ashes, oils, sludge or other refuse. There shall be no discharge of sewage or other wastes, except those having received treatment for the adequate removal of waste constituents including but not limited to, solids, color, turbidity, taste, odor or toxic material, such that these treated wastes will not lower the standards or alter the usages of this classification, nor shall such disposal of sewage or waste be injurious to aquatic life or render such dangerous for human consumption.

1977, c. 373, § 9.

There shall be no toxic wastes, deleterious substances, colored or other wastes or heated liquids discharged to waters of this classification either singly or in combination with other substances or wastes in such amounts or at such temperatures as to be injurious to edible fish or shellfish or to the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, odor or sanitary condition thereof; and otherwise none in sufficient amounts to make the waters unsafe or unsuitable for bathing or impair the waters for any other best usage as determined for the specific waters assigned to this class. There shall be no waste discharge which will cause the hydrogen-ion concentration or "pH" of the receiving waters to fall outside of the 6.7 to 8.5 range. There shall be no disposal of any matter or substance that contains chemical constituents which are harmful to humans, animal or aquatic life or which adversely affects any other water use in this class. No radioactive matter or substance shall be permitted in these waters which would be harmful to humans, animal or aquatic life and there shall be no disposal of any matter or substance which would result in radio-nuclide concentrations in edible fish or other aquatic life thereby rendering them dangerous for human consumption. These waters shall be free of any matter or substance which alters the composition of bottom fauna, which adversely affects the physical or chemical nature of bottom material, or which interferes with the propagation of fish or shellfish if indigenous to this area.

Class SC, the 4th highest classification, shall be of such quality as to be satisfactory for recreational boating, fishing and other similar uses except primary water contact. Such waters may be used for the propagation of indigenous shellfish to be harvested for depuration purposes, for a fish and wildlife habitat, and for industrial cooling and process uses. The dissolved oxygen content of such waters shall not be less than 5 parts per million at any time. The median numbers of coliform bacteria in any series of samples representative of waters in the shellfish growing area shall not be in excess of 700 per 100 milliliters, nor shall more than 10% of the samples exceed 2,300 coliform bacteria per 100 milliliters. The median numbers of fecal coliform bacteria in any series of samples representative of waters in the shellfish growing area shall not be in excess of 150 per 100 milliliters, nor shall more than 10% of the samples exceed 500 fecal coliform bacteria per 100 milliliters. In a non-shellfish growing area the median number of coliform bacteria in a series of samples representative of the waters shall not exceed 1,500 per 100 milliliters nor shall more than 10% of the samples exceed 5,000 coliform bacteria per 100 milliliters.

In a non-shellfish growing area the median numbers of fecal coliform bacteria in a series of samples representative of the waters shall not exceed 300 per 100 milliliters, nor shall more than 10% of the samples exceed 1,000 fecal coliform bacteria per 100 milliliters.

There shall be no floating solids, settleable solids, oil or sludge deposits attributable to sewage, industrial waste or other wastes, and no deposit of garbage, cinders, ashes, oils, sludge or other refuse. There shall be no discharge of sewage or other wastes, except those which have received treatment for the adequate removal of waste constituents including, but not limited to, solids, color, turbidity, taste, odor or toxic materials, such that these treated wastes will not lower the standards or alter the usages of this classification, nor shall such disposal of sewage or waste be injurious to aquatic life or render such dangerous for human consumption.

There shall be no toxic wastes, deleterious substances, colored or other wastes or heated liquids discharged to waters of this classification either singly or in combinations with other substances or wastes in such amounts or at such temperatures as to be injurious to edible fish or shellfish or to the culture or propagation thereof, or which in any manner shall adversely affect the flavor, color, or odor thereof or impair the waters for any other discharge ascribed to waters of this classification. There shall be no waste discharge which will cause the hydrogen-ion concentration or "pH" of the receiving waters to fall outside the 6.7 to 8.5 range. There shall be no disposal of any matter or substance that contains chemical constituents which are harmful to humans, animal or aquatic life or which adversely affects any other water use in this class. No radioactive matter or substance sh be permitted in these waters which would be harmful to humans, animals or aquatic life and there shall be no disposal of any matter or substance which would result in radio-nuclide concentrations in edible fish or other aquatic life thereby rendering them dangerous for human consumption.

Class SD waters shall be assigned only where a higher water classification cannot be attained after utilizing the best practicable treatment or control of sewage or other wastes. Waters of this class may be used for power generation, navigation, industrial process waters or cooling waters, and for migration of fish. Dissolved oxygen of these waters shall not be less than 3.0 parts per million at any time. The numbers of coliform bacteria allowed in these waters shall be only those amounts which will not, in the determination of the board, indicate a condition harmful to the public health or impair any usages ascribed to this classification.

1972, c. 618.

These waters shall be free from sludge deposits, solid refuse and floating solids such as oils, grease or scum. There shall be no disposal of any matter or substance in these waters which imparts color, turbidity, taste or odor which would impair the usages ascribed to this classification, nor shall such matter or substance alter the temperature or hydrogen-ion concentration of the waters so as to impair the usages of this classification. There shall be no disposal of any matter or substance that contains chemical constituents which are harmful to humans or which adversely affect any other water use in this class. No radioactive matter or substance shall be permitted in these waters which would be harmful to humans, animal or aquatic life and there shall be no disposal of any matter or substance which would result in radio-nuclide concentrations in edible fish or other aquatic life thereby rendering them dangerous for human consumption.

There shall be no disposal of sewage, industrial wastes or other wastes in such waters, except those which have received treatment for the adequate removal of waste constituents including, but not limited to, solids, color, turbidity, taste, odor or toxic material, such that these treated wastes will not lower the standards or altar the usages of this classification. Treated wastes discharged to these waters shall not create a public nuisance as defined in Title 17, Section 2802, by the creation of odor-producing sludge banks and deposits or other nuisance conditions.

With respect to all classifications hereinbefore set forth, the Board may take such actions as may be appropriate for the best interests of the public, when it finds that any such classification is temporarily lowered due to abnormal conditions of temperature or stream flow.

1963, c. 274, § 2; 1967, c. 475, § 5; 1969, c. 431, § 3; 1970, c. 581, § 2; 1971, c. 476, §§ 2, 3; 1972, c. 618.

§ 368. Inland waters

Androscoggin River Basin

1957, c. 322, § 1

Little Androscoggin River Drainage

1. All segments of the Little Androscoggin River drainage system not otherwise specified – Class B-1.

1967, c. 451, § 1.

2. Andrews Brook (Woodstock and Paris) – Class B-2.

3. Bird Brook (Norway) – Class C.

4. Bog Brook, in Hebron, Mechanic Falls and Minot and tributaries not otherwise specified – Class B-2.

5. Davis Brook (Poland) – Class C.

6. Hodgkins Brook (Auburn) tributary of Taylor Pond – Class B-2.

7. Indian Brook (Minot) – Class B-2.

8. Lapham Brook (Auburn) tributary of Taylor Brook – Class B-2.

9. Little Androscoggin River, main stem, from a point 0.25 miles above the bridge at West Paris to the confluence with Andrews Brook – Class C.

10. Little Androscoggin River, main stem, from the Andrews Brook confluence to the Route 26 Bridge in South Paris – Class B-2.

11. Little Androscoggin River, main stem, from the Route 26 Bridge in South Paris to the confluence with the outlet of Thompson Lake in Oxford – Class D.

12. Little Androscoggin River, main stem, from the confluence of the Thompson Lake Outlet (Oxford) to the confluence with the Androscoggin River in Auburn – Class C.

1967, c. 451, § 1.

13. Meadow Brook (Oxford and Poland) – Class B-2.

14. Minister Brook (Oxford) – Class B-2.

15. Moose Pond Outlet at Otisfield (does not include Greeley Brook) – Class B-2.

16. Morgan Brook (Minot) – Class B-2.

17. Outlet of Little Pennesseewassee Lake (Norway) – Class B-2.

18. Outlet of Thompson Lake (Oxford) – Class C.

19. Pennesseewassee Lake Outlet (Norway) – Class C.

1967, c. 304, § 9.

20. Range Brook and its tributaries, Mechanic Falls and Poland – Class B-1.

21. Taylor Brook (Auburn) – Class B-2.

1969, c. 88.

22. Unnamed Stream entering Bryant Pond, rising in the vicinity of Bucks Lodge and flowing through Bryant Pond Village – Class B-2.

23. Unnamed Brook (Minot) the first stream entering the Little Androscoggin River on upstream of and on the same side of the river as Morgan Brook – Class B-2.

24. Unnamed Brook in Auburn which enters the Little Androscoggin River from the north about 1.3 miles east of Minot Village – Class C.

25. West Branch of unnamed stream which enters north and Pennessewassee Lake from vicinity of Nobles Corner – Class B-2.

26. West Branch of Bog Brook and tributaries, Gardiner Brook and tributaries, and Brickwell Brook and tributaries, all in the Bog Brook drainage in the Mechanic Falls, Minot and Hebron – Class B-1.

Main Stem, Androscoggin River, that portion located below the most downstream crossing of the Maine-New Hampshire boundary to a line formed by the extension of the Brunswick-West Bath town line across Merrymeeting Bay in a northwesterly direction – Class C.

1967, c. 451, § 2.

Minor tributaries, Androscoggin River, those tributaries located below the most downstream crossing of the Maine-New Hampshire boundary a line formed by the extension of the Brunswick-West Bath town line across Merrymeeting Bay in a northwesterly direction.

1. All tributaries, direct and indirect of the Androscoggin River, lying wholly within the State of Maine, not otherwise specified or classified – Class B-1.

A. No Name Brook (Lewiston) – Class C.

1969, c. 120.

B. Logan Brook (Auburn) – Class C.

1969, c. 120.

C. Penley Brook (Auburn) – Class C.

1969, c. 120.

2. All tributaries, direct and indirect, of the Androscoggin River between the New Hampshire boundary and the bridge at West Peru not otherwise specified or classified – Class B-1.

3. Alder River, Bethel, main stem, from the confluence of Kendall Brook to the Androscoggin River – Class B-2.

1977, c. 373, § 10.

4. Alder River, main stem, from the outlet of South Pond at Lockes Mills Village to the confluence with Kendall Brook – Class B-2.

5. Austin Brook (or Abbott Brook), in Mexico, from Fourth Street to the Androscoggin River – Class C.

6. Bean Brook (or Swain Brook), Rumford, from its confluence with the Androscoggin River to the dam at the rendering company – Class C.

7. Chapman Brook and its tributaries above the bridge at the highway leading from Bethel to Gilead on the north side of the Androscoggin River – Class A.

8. Childs Brook (Canton) and its tributaries – Class B-2.

9. Ellis River from its confluence with the Androscoggin River to the sawmill dam at East Andover including West Branch of the Ellis River to the sawmill dam at Andover – Class B-2.

10. Keith Brook (Livermore) – Class B-2.

11. Lake Auburn Outflow (Auburn) – Class B-2.

12. Mill Brook, Bethel, from its confluence with the Androscoggin River to the Route 5 Bridge near the Bethel Inn Golf Course – Class B-2.

1977, c. 373, § 10.

13. Nezinscot River, main stem, from its junction with the outlet of South Pond to its confluence with the Androscoggin River – Class B-2.

14. Sabattus River (from Sabattus Lake to limits of Lisbon urban area) – Class C.

15. Sevenmile Stream (Jay) – Class B-2.

1977, c. 373, § 10.

16. Spear Stream, Peru, from the sawmill dam to the Androscoggin River – Class C.

17. Swift River from point at which Mexico-Rumford town boundary leaves the river at Osgood Avenue to the Androscoggin River – Class C.

18. Unnamed Stream (one mile below Livermore Falls Bridge) – Class B-2.

19. Webb River, Dixfield, from the White Bridge to the Androscoggin River – Class C.

20. Whitney Brook (Canton) and its tributaries – Class C.

21. All tributaries, direct and indirect, of the Androscoggin River which are interstate in nature by virtue of having portions of their drainage areas in New Hampshire and portions in Maine are classified as follows:

A. Drainage systems of Wild River in the Township of Gilead – Class B-1.

1965, c. 82, § 1.

B. Drainage systems of Lary Brook and Ingalls Brook in the Townships of Gilead and

Riley Class B-1.

1965, c. 83, § 1.

Upper Androscoggin Drainage, that portion lying above the most upstream crossing of the Maine-New Hampshire boundary.

1. All waters and segments thereof of the Androscoggin River Drainage System lying above the most upstream crossing of the Maine-New Hampshire boundary and wholly within the State of Maine, not otherwise specified or classified – Class B-1.

2. Cupsuptic Stream and its tributaries above its confluence with Cupsuptic Lake – Class A.

1954, c. 79, § 15.

3. Kennebago Stream and its tributaries above its confluence with Mooselookmeguntic Lake Class A.

1954, c. 79, § 15.

4. The Magalloway River and its tributaries above the first crossing of the Maine-New Hampshire state line Class A.

1954, c. 79, § 15.

5. Mill Stream, Rangeley Class B-2.

1977, c. 373, § 11.

6. All waters and segments thereof of the Androscoggin River Watershed which are interstate in nature by virtue of having portions of their drainage area in New Hampshire and portions in Maine are classified as follows:

A. Waters tributary to the Stearns Brook (Milan & Success, New Hampshire) drainage in the Township of Riley Class B-1.

B. Waters tributary to the Chickwolnepy Stream (Milan, New Hampshire) drainage in the Township of Grafton Class B-1.

C. Waters tributary to the Mollidgewock Stream, (Errol, New Hampshire,) drainage in the Township of Upton Class B-1.

D. Waters, not otherwise classified, tributary to the Umbagog Lake drainage in the Townships of Upton, Grafton, Andover, North Surplus, C-Surplus, Township C and Magalloway Plantation Class B-1.

E. Waters not otherwise classified tributary to the Magalloway River drainage in the Townships of Magalloway Plantation, Lincoln Plantation, Parkertown, Lynchtown, Parmachenee and Bowmantown Class B-1.

1965, c. 83, § 2.

Aroostook River Basin

1957, c. 322, § 4

Aroostook River, Main Stem

1. Aroostook River above the junction with St. Croix Stream – Class A.

1954, c. 79, § 15.

2. Aroostook River from junction with St. Croix Stream to injunction with Machias River Class B-1.

3. Aroostook River from Machias River confluence to the Castle Hill-Ashland Town line – Class B-2.

1967, c. 19, § 1; 1977, c. 373, § 12.

4. Aroostook River from the Ashland-Castle Hill town line to the Wade-Washburn town line Class B-2.

5. Aroostook River from the Wade-Washburn town line to the crossing of the Aroostook Valley Railroad about 6 miles below Washburn Class B-2.

1967, c. 19, § 1; 1977, c. 373, § 12.

below Washburn to the junction with Presque Isle Stream – Class B-2.

1977, c. 373, § 13.

7. Aroostook River from the entrance of Presque Isle Stream to the international boundary, except for that portion beginning at a point 100 yards below the intake of the Caribou water supply and extending upstream a distance of 3 miles – Class C.

1967, c. 19, § 1.

8. Aroostook River from a point 100 yards downstream of the Caribou water supply intake to a point 3 miles upstream from this starting point – Class B-1.

Tributaries

1. All tributaries, direct and indirect, of the Aroostook River above the junction with St. Croix Stream – Class A.

1954, c. 79, § 15.

2. All tributaries, direct and indirect, of the Aroostook River from its junction with St. Croix Stream to its junction with the Machias River, unless otherwise specified or classified – Class B-1.

3. All waters of the Aroostook River Basin not otherwise specified or classified which are wholly within the State of Maine – Class B-2.

4. Amsden Brook below the starch factory dam (Fort Fairfield) – Class B-1.

1967, c. 19, § 2.

5. Bryant Brook, Fort Fairfield, from Fisher Street to the Aroostook River confluence – Class B-2.

1967, c. 304, § 10; 1977, c. 373, § 14.

6. Butterfield Brook, Limestone, from the northern fence of Loring Air Force Base to its junction with Limestone Stream – Class B-1.

7. Butterfield Brook above Loring Air Force Base – Class B-1.

8. Caribou Stream from Colby Siding Road Bridge to its confluence with the Aroostook River – Class B-2.

1977, c. 373, § 15.

9. Dudley Brook, Castle Hill, above confluence with North Branch of Presque Isle Stream – Class B-1.

10. Four Corners Brook (Limestone) – Class B-1.

11. Goodrich Brook (also known as Colony Brook), Fort Fairfield, below the dam at the starch factory – Class B-1.

1967, c. 19, § 2.

12. Hardwood Brook (Caribou & Presque Isle) – Class B-1.

13. Libby Brook above the Mapleton-Washburn Road – Class B-1.

14. Limestone Stream, from the Route 165 Bridge in Limestone Village to the Long Road Bridge – Class B-2.

1967, c. 19, § 2; 1977, c. 373, § 16.

14-A. Limestone Stream from the Long Road Bridge to the Canadian border – Class C.

1977, c. 373, § 17.

15. Little Machias River and its tributaries – Class A.

1954, c. 79, § 15.

16. Little Madawaska River and tributaries including Madawaska Lake tributaries above the Route 161 Highway Bridge in Stockholm – Class A.

1954, c. 79, § 15.

17. Machias River and its tributaries above the Garfield Plantation-Ashland town line – Class A.

1954, c. 79, § 15.

18. Machias River, Ashland, from immediately upstream of the starch factory outfall to the Ashland-Garfield Plantation boundary – Class B-1.

19. Machias River, Ashland, from a point immediately above the starch factory outfall to its junction with the Aroostook River – Class B-1.

1967, c. 19, § 2.

20. Otter Brook (Caribou) – Class B-1.

21. Pattee Brook at Fort Fairfield and its tributaries above the dam just upstream of the highway bridge on Route 167 – Class A.

1954, c. 79, § 15.

22. Pattee Brook, Fort Fairfield, from dam at starch factory to confluence with Aroostook River Class B-1.

1967. c. 19, § 2.

23. Presque Isle Stream and its tributaries above its confluence with, but not including, the North Branch of Presque Isle Stream – Class A.

1954, c. 79, § 15.

24. Presque Isle Stream, from its confluence with the Aroostook River to the Bangor and Aroostook Railroad Bridge nearest Chapman and High Streets in Presque Isle – Class B-2.

1967, c. 19, § 2; 1977, c. 373, § 16.

25. Prestile Brook (Caribou) – Class B-1.

26. Rand Pond Outlet (Presque Isle) – Class B-1.

27. St. Croix Stream and its tributaries above its confluence with the Aroostook River – Class A.

28. Salmon Brook and tributaries upstream of the dam immediately upstream of Washburn Village – Class B-1.

29. Salmon Brook, Washburn, from the dam immediately above the village to its junction with the Aroostook River – Class C.

1967, c. 304, § 10.

30. Silver Springs Brook – Class B-1.

31. Small stream (unnamed) in Presque Isle near vining station on Washburn Road – Class C.

32. Spring Brook, Mapleton, above confluence with North Branch of Presque Isle Stream – Class B-1.

33. Squapan Stream and tributaries above the B. & A. Railroad Bridge – Class A.

Kennebec River Basin

1957, c. 322, § 2

Carrabassett River

1. Carrabasset River, all portions, tributaries and portions of tributaries not otherwise specifically described and otherwise classified – Class B-1.

2. Carrabasset River and its tributaries above a point immediately downstream of its junction with the West Branch of the Carrabasset River in Kingfield – Class A.

1954, c. 79, § 15.

3. Carrabasset River, main stem, from junction with West Branch at Kingfield to a point 1 mile above the railroad bridge in North Anson – Class B-2.

4. Carrabasset River, main stem, from point 1 mile above railroad bridge at North Anson to its junction with the Kennebec River – Class C.

5. Gilman Stream, main stem, from bridge at New Portland to confluence with the Carrabasset River – Class C.

6. Harris Brook, New Portland, below Route 16 in Village of North New Portland to its confluence with Gilman Stream – Class C.

7. Lemon Stream, main stem, from outlet of Mill Pond in New Vineyard to its confluence with Carrabasset River – Class B-2.

8. Mill Stream, Anson, from the railroad bridge in North Anson Village to the confluence with the Carrabasset River – Class C.

9. Stanley Stream, Kingfield – Class C.

Cobbosseecontee Stream Drainage System

1. All water and portions of the Cobbosseecontee Drainage System not otherwise specified or classified – Class B-1.

2. Carleton Pond Outlet and its tributaries from Carleton Pond to Upper Narrows Pond Class B-2.

1977, c. 373, § 18.

2-A. Cobbosseecontee Stream, main stem, from its confluence with the Kennebec River to the Dam at latitude 44°13.3', longitude 69°47.2' (approximately) – Class C.

1967, c. 304, § 1.

3. Miniwah (Jock) Stream, Wales, and its tributaries – Class B-2.

1977, c. 373, § 18.

4. Outlet Lake Maranacook between Lake Maranacook and Lake Annabessacook – Class B-2.

1977, c. 373, § 18.

5. Tributaries of Lake Annabessacook with the exception of Wilson Stream and others specifically defined – Class B-2.

6. Tributaries of Tacoma Lakes, direct and indirect, and the outlet of Tacoma Lakes to Cobbosseecontee Stream – Class B-1.

1977, c. 373, § 18.

7. Unnamed stream entering Cobbosseecontee Lake through golf course from immediately south of Manchester Village – Class C.

8. Unnamed stream and its tributaries flowing from Loon Pond in Litchfield and the tributaries of Loon Pond – Class B-2.

9. Magotta Meadow Brook and its tributaries entering the southerly extremity of Pleasant Pond from the south – Class B-1.

1977, c. 373, § 18.

10. Unnamed stream and its tributaries entering the cove at the southwest extremity of Pleasant Pond – Class B-2.

11. Unnamed brook and its tributaries entering northerly cove of Lake Maranacook at Readfield across Route 17 – Class C.

12. Wilson Stream (Mud Mills Stream), southerly branch, and tributaries above its junction with the branch from Wilson Pond, including the outlet of Cochnewagan Pond – Class B-1.

1977, c. 373, § 18.

13. Wilson Stream (Monmouth), main stem, from outlet of Wilson Pond to the junction with the branch of Wilson Stream (Mud Mills Stream), entering from the vicinity of Monmouth Village below the tracks of the Maine Central Railroad – Class B-2.

1967, c. 304, § 2; 1977, c. 373, § 19.

14. Wilson Stream (Monmouth), main stem, from the junction with the branch of Wilson Stream (Mud Mills Stream), entering from the vicinity of Monmouth Village below the tracks of the Maine Central Railroad to its entrance to Annabessacook Lake – Class B-2.

1977, c. 373, § 18.

Kennebec River, Main Stem, and those portions of tributaries affected by the rise and fall of the tide from Wyman Dam at Moscow to a line drawn between the most easterly point of land at the southerly end of Popham Beach in Phippsburg and the southernmost extension of Bay Point in Georgetown, not including the Androscoggin River and tributaries northwest of a line formed by the extension of the Brunswick-West Bath town line across Merrymeeting Bay in a northwesterly direction.

1. From Wyman Dam in Moscow to Fall Brook, Solon Class B-1.

1977, c. 373, § 20.

1-A. From Fall Brook, Solon, to the head of the island immediately below Great Eddy in Skowhegan Class C.

1977, c. 373, § 21.

2. From the head of the island immediately below Great Eddy to the power company dam in Fairfield Class B-2.

1961, c. 300.

3. From the power company dam in Fairfield to a point 0.5 miles above the southerly boundary of the Towns of Fairfield and Benton Class C.

1961, c. 332.

4. From a point 0.5 miles above the southerly boundary of Fairfield and Benton to a line across the Kennebec River Tidal Estuary drawn due west from the southerly extension of Green Point on the easterly shore of the Kennebec River across the channel east of Swan Island to the island, along the easterly shore of Swan Island to southernmost point of the island, thence due west to the westerly shore of the river Class C.

1967, c. 304, § 3.

5. From a line drawn due west across the Kennebec River Tidal Estuary from the southerly extension of Green Point on the easterly shore of the Kennebec River, across the channel east of Swan Island to the island, along the easterly shore of Swan Island to the southernmost point of the island, thence due west to the westerly shore of the river, to a line drawn across the Tidal Estuary of the Kennebec River, due east, from Abagadasset Point, and including tidal portions of tributaries not otherwise classified – Class C.

6. From a line drawn across the tidal estuary of the Kennebec River, due east from Abagadasset Point, and bounded by a line across the southwesterly arm of Merrymeeting Bay formed by an extension of the Brunswick-West Bath town line across the bay in a northwesterly direction to the westerly shore of Merrymeeting Bay and to a line drawn from Chop Point in Woolwich to West Chop Point in Bath and including tidal portions of tributaries not otherwise classified Class B-2.

1963, c. 274, § 4.

7. From a line drawn from Chop Point to Woolwich to West Chop Point in Bath to a line across the Kennebec River bearing due west from Bluff Head in the Town of Arrowsic and including tidal portions of tributaries not otherwise classified – Class SB-2.

1963, c. 274, § 4.

8. From a line extending due west from Bluff Head in the Town of Arrowsic to a line drawn between the most easterly point of land at the southerly end of Popham Beach in Phippsburg and the southernmost extension of Bay Point in Georgetown and including tidal portions of tributaries not otherwise classified Class SB-1.

1963, c. 274, § 4.

9. With respect to subsections 1 to 8, a municipality, sewer district, person, firm, corporation, the State or any subdivision thereof, or other legal entity shall not be deemed to be in violation of section 451 at any time or times prior to October 1, 1976 with respect to any of said classifications if by such time or times he or it, with regard to a project designed to achieve compliance with the applicable classification, shall have completed all of the steps required to be then completed by the following schedule:

A. Preliminary plans and engineers' estimates shall be completed and submitted to the Board of Environmental Protection on or before October 1, 1964.

B. Arrangements for administration and financing shall be completed on or before October 1, 1968. This period, in the case of municipalities, shall encompass all financing including obtaining of state and federal grants.

C. Detailed engineering and final plan formulation shall be completed on or before October 1, 1969.

D. Review of final plans with the Board of Environmental Protection shall be completed and construction commenced on or before October 1, 1970.

E. Construction shall be completed on or before October 1, 1976.

1961, c. 330.

Messalonskee Stream Drainage System

1. All waters and segments of the Messalonskee Drainage System not otherwise specified or classified – Class B-1.

2. Clear Brook, between East Pond and North Pond – Class B-2.

3. Messalonskee Stream, main stem from outlet of Messalonskee Lake to Rice's Rips Dam – Class C.

1967, c. 304, § 4.

4. Messalonskee Stream, main stem, from Rice's Rips Dam to Union Dam in Waterville – Class C.

5. Messalonskee Stream, main stem, from Union Dam to junction with Kennebec River – Class C.

1967, c. 304, § 4.

6. Tributaries of Messalonskee Stream entering between the outlet of Messalonskee Lake and its junction with the Kennebec River – Class C.

Minor Tributaries below Wyman Dam in Moscow

1. All tributaries, direct and indirect, or portions thereof, not otherwise classified or specified, entering the Kennebec River between Wyman Dam and Chop Point in Bath. (This is in no way intended to include the Androscoggin River) Class B-1.

2. All waters of the Carrabasset Stream System not specifically mentioned or otherwise classified – Class B-2.

3. Austin Stream and its tributaries above the highway bridge on Route 201 in the Town of Bingham – Class A.

1954, c. 79, § 15.

4. Bog Brook, West Athens Vicinity, above confluence with Bradbury Stream – Class B-2.

5. Bond Brook and its tributaries below the crossing of Route 11 prior to reconstruction of this route in 1955 – Class C.

1967, c. 304, § 5.

6. Cold Brook and its tributaries (Wesserunsett Drainage) – Class B-2.

7. Currier Brook, Skowhegan, from Fairview Avenue to its confluence with the Kennebec River – Class C.

8. Fall Brook, Solon, from the dam upstream of Route 201 in Solon Village to its confluence with the Kennebec River – Class C.

9. Greeley Pond Brook, below the outfall of the V.A. Hospital sewage treatment plant to the confluence with Togus Stream – Class B-2.

10. Kennedy Brook, Augusta – Class B-2.

11. Mill Stream, in the village of Norridgewock, below the upstream bridge in the village – Class C.

12. Mill Stream, and tributaries, Norridgewock, above upstream bridge in Norridgewock Village Class B-2.

13. Sevenmile Stream from the entrance of Webber Pond Outlet to the Kennebec River Class B-2.

14. Togus Stream, from Greeley Pond Brook junction to the Kennebec River Class B-2.

15. Twomile Brook, Augusta, from the entrance of the Cushnoc Housing Development sewer to the Kennebec River Class C.

16. Unnamed stream, in the village of Anson, below its upstream bridge to its confluence with the Kennebec River Class B-2.

17. Unnamed stream and tributaries crossing Bangor Street in Augusta near Coca Cola bottling plant Class C.

18. Unnamed tributary of Cathance River in Bowdoinham which enters the tidal portion of the West Branch of the Cathance River approximately 0.7 miles above the bridge in Bowdoinham from a northwesterly direction Class C.

1967, c. 304, § 5.

19. Webber Pond Outlet, Vassalboro, from Webber Pond to the confluence with Sevenmile Stream Class B-2.

20. West Branch of Wesserunsett Stream, bewteen Wesserunsett Lake and Smith Pond; including Pain Brook, Kincaid Stream, Haley Stream and Longley Brook Class B-2.

Sandy River

1. All tributaries, or portions thereof, of Sandy River not otherwise classified or recommended for classifications Class B-1.

2. Bean Brook, Strong, between its junction with Doctor Brook and with Valley Brook Class C.

3. Cascade Brook, Farmington, between the Route 2 Bridge and Sandy River Class B-2.

1977, c. 373, § 22.

4. Lemon Stream, Starks, from dam in Starks Village to its confluence with the Sandy River Class C.

5. Little Norridgewock Stream and tributaries above confluence with Wilson Stream Class B-2.

6. Meadow Brook, Wilton, from Depot Street to its confluence with Wilson Stream Class C.

7. Sandy River and its tributaries above Phillips at the highway bridge on Route 142 Class A.

1954, c. 79, § 15.

8. Sandy River, main stem, from the Route 142 Bridge in Phillips to Route 4 Bridge in Farmington Class B-2.

9. Sandy River, main stem, from Route 4 Bridge in Farmington to the entrance of Beales Brook Class C.

1967, c. 304, § 6.

10. Sandy River, main stem, from the entrance of Beales Brook to its confluence with the Kennebec River Class C.

11. Temple Stream, between the bridge in the Village of Temple and Sandy River Class C.

12. Unnamed stream, Farmington, urban area vicinity of Middle Streat Class C.

13. Unnamed stream, below canning factory in New Sharon Village Class C.

1967, c. 304, § 6.

14. Valley Brook, Strong, between the Route 145 Bridge and the main stem of the Sandy River – Class C.

15. Wilson Stream, main stem, from outlet of Wilson Pond to the Route 133 crossing – Class C.

1967, c. 304, § 6.

16. Wilson Stream, main stem, from Route 133 crossing to junction with Sandy River – Class C.

Sebasticook River, Main Stem, including East and West Branches.

1. All portions and segments of the main stem of the Sebasticook River not otherwise specified or classified above the dam of the Central Maine Power Company at Winslow – Class B-2.

2. East Branch from outlet of Lake Wassookeag to confluence of tributary entering from Puffers Pond – Class C.

1965, c. 336.

3. East Branch from the junction of Puffers Pond tributary to the outlet of Corundel Lake – Class C.

4. East Branch from outlet of Corundel Lake to Sebasticook Lake – Class C.

1965, c. 336.

5. East Branch from outlet of Sebasticook Lake to Eelweir Bridge – Class C.

1967, c. 304, § 7.

6. West Branch from outlet of Great Moose Lake to Route 43 Bridge in Hartland – Class C.

7. West Branch from Route 43 Bridge in Hartland to its junction with the East Branch – Class C.

1967, c. 304, § 7.

8. Main Stem from Eelweir Bridge to Pittsfield-Burnham town line – Class C.

1967, c. 304, § 7.

9. Main Stem from a point 0.5 mile above the highway bridge at Clinton to a point 1.0 mile above the highway bridge at Benton Falls – Class C.

10. Main Stem below dam of the Central Maine Power Company at Winslow – Class C.

1967, c. 304, § 7.

Tributaries of the Sebasticook River Drainage System

1. All portions and segments of waterways of the Sebasticook River Drainage not otherwise specified or classified – Class B-2.

1967, c. 304, § 8.

2. All tributaries on the west side of the main stem of the Sebasticook River below the dam of the Central Maine Power Company at Winslow – Class B-2.

3. Brackett Brook (Palmyra and Newport) – Class C.

1967, c. 304, § 8.

4. Carlton Stream and tributaries – Class C.

5. China Lake Outlet, main stem, from crossing of East Vassalboro to North Vassalboro road to junction with main stem Sebasticook River – Class C.

1967, c. 304, § 8.

6. China Lake Outlet, main stem, from crossing of highway between East Vassalboro and North Vassalboro to the Outlet of China Lake – Class C.

7. Farnham Brook below Route 100 – Class C.

1967, c. 304, § 8.

8. Fifteenmile Stream and tributaries below its junction with Mill Stream near Albion – Class C.

9. Higgins Brook, main stem, from crossing of Route 154 above Harmony to its outlet to Great Moose Lake – Class C.

10. Joaquin Brook and its tributaries – Class B-1.

11. Meloon Brook and its direct and indirect tributaries – Class B-1.

12. Mill Stream from immediately above crossing of Albion-Benton Road to junction with Fifteenmile Stream – Class C.

1967, c. 304, § 8.

13. Pratt Stream and its tributaries above its junction with Fifteenmile Stream – Class B-1.

14. Puffers Pond tributary and all branches thereof – Class B-1.

15. Sandy Stream, main stem, from its junction with Bacon Brook to a point ½ mile from the entrance of Mussey Brook – Class C.

1967, c. 304, § 8.

16. Sandy Stream, main stem, from outlet of Sandy Pond to its junction with Halfmoon Stream – Class C.

1967, c. 304, § 8.

17. Small streams and tributaries, direct or indirect, not otherwise specified or classified, entering the Sebasticook River from the east between Twentyfivemile Stream and Fifteenmile Stream – Class C.

18. Small streams and their tributaries not otherwise specified entering the Sebasticook River from the east between the outlet of Fifteenmile Stream and the point of discharge of China Lake Outlet – Class C.

Upper Kennebec River Basin,

that portion lying above Wyman Dam in Moscow.

1. All waters tributary to the flowage of Long Falls Dam on the Dead River with the exception of the North Branch of Dead River, the South Branch of Dead River and Stratton Brook – Class B-1.

1965, c. 426. § 2.

2. All waters tributary to the Dead River between Long Falls Dam and its junction with the Kennebec River at the Forks – Class B-1.

1955, c. 426, § 2.

3. Dead River, South Branch, segments and tributaries thereof, not otherwise defined above the normal highwater mark of the reservoir created by the Long Falls Dam – Class B-1.

1955, c. 426, § 2.

4. Kennebec River and tributaries below Moosehead Lake (including East and West Outlets), the sections of Dead River (main stem) below Long Falls Dam, to Wyman Dam in Moscow – Class B-1.

5. Moose River and its tributaries above the outlet of Big Wood Pond in Jackman – Class A.

1954, c. 79, § 15.

6. Moose River, all tributaries, main stem excluded, entering between the outlet of Wood Pond at Jackman and the mouth of Moose River at Moosehead Lake in Rockwood – Class B-1.

7. Moose River, Jackman Plantation, between Big Wood Pond and Long Pond – Class C.

8. Moose River, from entrance to Long Pond to entrance to Moosehead Lake – Class B-1.

9. Moosehead Lake, all tributaries above normal highwater with the exception of Roach River below First Roach Pond Dam and the unnamed streams entering East and West Coves of Moosehead Lake respectively through the Village of Greenville – Class B-1.

1955, c. 426, § 2.

10. North Branch of Dead River and its tributaries above its confluence with Flagstaff Lake -- Class A.

1955, c. 426, § 2.

11. Roach River, main stem, First Roach Pond Dam to outlet – Class B-2.

1955, c. 426, § 2.

12. Stratton Brook and its tributaries above the Stratton-Kingfield highway – Class B-1.

1955, c. 426, § 2.

13. Unnamed stream and its tributaries entering Moosehead Lake at East Cove through Greenville Village – Class B-2.

1955, c. 426, § 2; 1977, c. 373, § 23.

14. Unnamed stream and its tributaries entering Moosehead Lake at West Cove through Greenville Junction -- Class B-2.

1955, c. 426, § 2; 1977, c. 373, § 14.

Meduxnekeag River Basin

1955, c. 426, § 4

1. All segments and branches of the Meduxnekeag River, not otherwise defined above the international boundary – Class B-1.

2. All segments and tributaries of Prestile Stream, not otherwise defined, above the international boundary – Class C.

1965, c. 42, § 1; 1967, c. 18, § 1.

3. Big Brook tributary, main stem, from the bridge at the Bangor & Aroostook Railroad to the outlet of the stream at the Meduxnekeag River – Class B-2.

1977, c. 373, § 24.

4. Meduxnekeag River, main stem, from outlet of pond at New Limerick downstream to a bridge at the road just upstream of Houlton's compact area leading to gravel pits – Class B-2.

5. Meduxnekeag River, main stem, from bridge at gravel pit entrance just upstream of the compact area in Houlton to the international boundary – Class B-2.

1977, c. 373, § 24.

6. North Branch of the Meduxnekeag River and its tributaries above the Monticello-TCR2 boundary – Class A.

1954, c. 79, § 15.

7. North Branch of the Meduxnekeag River, main stem, from the bridge at U.S. Highway No. 1 to the international boundary – Class B-2.

1957, c. 322, § 2; 1977, c. 373, § 25.

8. Pearce Brook tributary in Houlton – Class B-2.

1967, c. 304, § 11; 1977, c. 373, § 26.

9. Prestile Stream, main stem, from the bridge at Westfield to the international boundary in the Town of Bridgewater – Class C.

1965, c. 42, § 1; 1967, c. 18, § 1.

10. South Branch of the Meduxnekeag River, main stem, from the dam at Hodgdon to the outlet into the main river – Class B-2.

1957, c. 322, § 2; 1977, c. 373, § 25.

11. Whitney Brook and its tributaries above the confluence with Prestile Stream – Class B-2.

1957, c. 322, § 2.

Mousam River Basin

1957, c. 322, § 8

1. All portions of Mousam River drainage not otherwise specified or classified – Class B-1.

2. Hay Brook – Class C.

3. Mousam River, main stem, and tributaries, West Branch from dam at Emery's Mills to northerly boundary of compact area of Sanford about 0.5 mile above Mill Street in the Springvale section – Class B-2.

4. Mousam River, main stem, West Branch, from northerly boundary of compact area of Sanford about 0.5 mile above Mill Street in Springvale section to its junction with the East Branch – Class C.

1971, c. 106, § 1.

Time Schedule

A. A municipality, sewer district, person, firm, corporation or other legal entity shall not be deemed in violation of this subsection at any time or times prior to October 1, 1974 with respect to those classifications if by such time or times he or it with respect to any project necessary to achieve compliance with applicable classification shall have completed all steps required to then be completed by the following schedule.

(1) Preliminary plans and engineers estimates shall be completed and submitted to the Board of Environmental Protection on or before March 1, 1972.

(2) Arrangements for administration and financing shall be completed on or before March 1, 1972. This period, in the case of municipalities, shall encompass all financing including obtaining of state and federal grants.

(3) Detailed engineering and final plan formulation shall be completed on or before October 1, 1972.

(4) Review of final plans with the Board of Environmental Protection shall be completed and construction commenced on or before June 1, 1973.

(5) Construction shall be completed and in operation on or before October 1, 1976.

1971, c. 618.

This reclassification shall not be deemed to exempt any municipality, sewer district, person, firm, corporation or other legal entity from complying with the water quality standards of the last previous classification, as such standards existed on December 31, 1970, and enforcement action may be maintained or noncompliance therewith.

1971, c. 106, § 2.

5. Mousam River, main stem and tributaries entering from west from junction of East and West Branches to tidewater – Class B-2.

6. Mousam River, Middle Branch, from bridge near Yeaton Hill to junction with West Branch – Class B-2.

1967, c. 180, § 3.

7. Mousam River, East Branch, main stem, through Waterboro Village and tributary entering at downstream edge of Waterboro Village – Class C.

Penobscot River Basin

1957, c. 322, § 3

East Branch Penobscot River Drainage System

1. East Branch of the Penobscot River and its tributaries above the outlet of Mattagamon Lake Class A.

1954, c. 79, § 15.

2. Penobscot River, East Branch, segments and tributaries thereof, between its outlet and the dam at Grand Lake Mattagamon Class B-1.

1955, c. 420, § 2.

Main Stem, that portion of the Penobscot River between the confluence of East and West Branches south to a line drawn due east from Fort Point on Cape Jellison.

1. The main stem of the West Branch of the Penobscot River from the outlets of Ferguson and Quakish Lakes in Millinocket to the highway bridge just above the junction of the East and West Branches in Medway which carries Route 116 across the West Branch – Class D.

2. The main stem of the Penobscot River and the West Branch from the Route 116 highway bridge in Medway to a line extended in an east-west direction from the outlet of Reed Brook in the Village of Hampden Highlands to the Penobscot River Class C.

Whereas the segment of the Penobscot River between the junction of the East and West Branches thereof and Weldon Dam is now heavily loaded with cumulative deposits of bacterial cellular and other materials exerting a significant oxygen demand over and above that created by the fermentation of current daily loads and whereas some time will elapse before this source of oxygen demand is stabilized, no abatement action shall be taken by state regulatory agencies, if at that time current daily upstream loadings have been reduced to a value which could reasonable be expected to result in conditions which will not foster cumulative deposits and will be compatible with the specifications or the segment classification, with the added and special provisions that the dissolved oxygen level shall not fall below 7.0 p.p.m. at the Old Town-Milford bridge or at the Stillwater bridge.

3. The tidal estuary of the Penobscot River from a line extended in an east-west direction across the estuary from the mouth of Reed Brook in the Village of Hampden Highlands to a line extended in a westerly direction across from the southernmost tip of Verona Island to the westerly bank of the Penobscot Estuary and from the southernmost tip of Verona Island to the easterly bank of the Penobscot Estuary at the Bucksport-Penobscot town boundary – Class SC.

1965, c. 179, § 1.

Mattawamkeag River Drainage System

1955, c. 426, § 2

1. All segments and tributaries of the Mattawamkeag River Drainage, not otherwise defined, above its outlet to the Penobscot – Class B-1.

2. Baskahegan Stream, main stem, from its outlet to the Mattawamkeag River to the narrows in Crooked Brook Flowage approximately one mile above the village of Danforth – Class C.

3. Cold Brook, a tributary of the Mattawamkeag River, East Branch, entering at Smyrna Mills, the main stem thereof from the confluence with Huntley Mill Pond Brook to its outlet to the East Branch of the Mattawamkeag River – Class B-2.

4. Fish Stream, main stem only, from its confluence with the West Branch of the Mattawamkeag River to the entrance of the Crystal Brook tributary – Class C.

5. Fish Stream, main stem only, from its confluence with Crystal Streams tributary to a point ¼ mile upstream of the Route 11 Bridge in Patten – Class C.

1967, c. 304, § 12.

6. Huntley Mill Pond in Merrill, the main stem from the outlet of Huntley Mill Pond to the confluence with Cold Brook – Class B-2.

7. Mattakeunk Stream, main stem, from the outlet of Dwinal Pond to Mattakeunk Pond – Class C.

8. Mattawamkeag River, main stem, outlet to the junction of the East and West Branches in the Town of Haynesville – Class B-2.

9. Mattawamkeag River, East Branch, between the junction of the East and West Branches in Haynesville and the entrance of the Cold Brook tributary near Smyrna Mills Village   Class B-2.

10. Mattawamkeag River, West Branch, main stem, from the junction of the East and West Branches of the river to, and including, the thoroughfare between the upper and lower Mattawamkeag Lakes   Class B-2.

11. Mattawamkeag River, West Branch, main stem, from its outlet to upper Mattawamkeag Lake to a point 100 feet upstream of the railroad bridge at Island Falls – Class C.

1967, c. 304, § 12.

12. Molunkus Stream, main stem, from its outlet to the Mattawamkeag at Kingman to a point ¼ mile above the highway bridge at Sherman Mills – Class B-2.

13. Webb Brook and its tributaries in the Town of Patten – Class C.

1967, c. 304, § 12

Penobscot River, Minor Tributaries, from the confluence of the East and West Branches to a line drawn due east from Fort Point in the Town of Stockton Springs, not including the Piscataquis and Mattawamkeag Rivers Drainage Systems.

1. All tributaries, direct and indirect, and segments thereof, of the Penobscot River from the confluence of the East and West Branches of the Penobscot, with the exception of the Piscataquis and Mattawamkeag Rivers Drainage Systems, to and including Pushaw Stream on the west shore of the Penobscot River and to and including Blackman Stream on the east shore of the Penobscot River, unless otherwise specified or classified   Class B-1.

1971, c. 273.

2. All minor tributaries on the west shore of the Penobscot River between Pushaw Stream and the Hampden-Winterport line, not otherwise designated – Class C.

3. All minor tributaries on east shore of the Penobscot River between Blackman Stream and the Orrington-Bucksport line, not otherwise designated – Class C.

4. All streams, segments and tributaries thereof, not otherwise defined, entering tidewater between the head of tide on Marsh Stream (Frankfort) and Fort Point (Stockton Springs)   Class C.

5. All minor tributaries, segments, direct and indirect, not otherwise defined, entering tidewater from the head of tide on the Orland River south to a line drawn due east from Fort Point (Stockton Springs)   Class B-1.

6. Cambolasee Stream, Lincoln, from the Route 2 crossing to the Penobscot River   Class C.

7. Great Works Stream and its tributaries above the highway bridge on Route 178 in the Town of Bradley   Class A.

8. Halfmoon Pond (Searsport), and its tributaries above the pond outlet   Class B-1.

9. Kenduskeag Stream and its tributaries above the Bullseye Bridge (Bangor)   Class B-2.

10. Kenduskeag Stream and tributaries below the Bullseye Bridge (Bangor)   Class C.

1967, c. 304, § 13.

11. Marsh River (Prospect), segment and tributaries thereof, not otherwise defined, above tidewater   Class B-2.

12. Marsh Stream (Frankfort, etc.), segments and tributaries, not otherwise defined, above tidewater   Class B-2.

13. Marsh Stream, main stem, from a point 0.4 mile above the bridge at Brooks Village to the inlet of Basin Pond   Class B-2.

1969, c. 286.

14. Marsh Stream, main stem, from its junction with the North Branch of Marsh Stream to the bridge at West Winterport   Class B-2.

1969, c. 286.

15. Marsh Stream, North Branch, main stem, from a point 0.25 mile upstream of Monroe Village to the junction of the North Branch with the main stem Class B-2.

1969, c. 286.

16. Marsh Stream and its tributaries upstream of a point 0.4 mile above the highway bridge in Brooks Village – Class B-1.

17. Mattanawcook Stream, Lincoln, below outlet of Mattanawcook Pond - Class C.

1967, c. 304, § 13.

18. Olamon Stream and its tributaries above the bridge on Horseback Road Class A.

19. Orland River and its tributaries above the outlet of Alamoosook Lake Class A.

20. Orland River, segments and tributaries thereof, not otherwise defined, above tidewater - Class B-1.

21. Orland River or Narramissic River from tidewater to a point opposite the Oak Grove cemetery Class B-2.

22. Outlet of Silver Lake above the village limits of Bucksport – Class B-1.

23. Passadumkeag River and its tributaries above Grand Falls – Class A.

24. Sourdabscook Stream and its tributaries above the dam of the Hampden Water District at Hampden – Class A.

25. Sourdabscook Stream from the dam of the Hampden Water District to the Penobscot River -- Class C.

26. Sunkhaze Stream and its tributaries above its confluence with the Penobscot River Class A.

27. Unnamed stream and its tributaries entering tidewater at Mill Cove near Sandy Point, above the first highway bridge west of the Route 3 Highway Bridge Class B-1.

Piscataquis River Drainage System

1965, c. 426, § 2

1. All waters, segments and tributaries, direct and indirect, of the Piscataquis River Drainage System not otherwise specified or classified - Class B-1.

2. All tributaries of the Piscataquis River and segments thereof not otherwise designated or classified between, not including, the Sebec River and the Maine Central Railroad Bridge at Dover-Foxcroft – Class B-2.

3. Carleton Stream, Sangerville, from its mouth to the crossing of Route 23 - Class C.

4. Carleton Stream and its tributaries above Route 23 – Class B-2.

5. Davee Brook below North Street, Dunham Brook below Forest Street and Fox Brook below Grove Street in Dover-Foxcroft - Class C.

6. East and West Branches of the Piscataquis River and their tributaries above their confluence near Blanchard Class A.

1954, c. 79, § 15.

7. East and West Branches of the Pleasant River and their respective tributaries above the confluence of these 2 streams above Brownville Jct. – Class A.

1954, c. 79, § 15.

8. Kingsbury Stream, Abbott, from its mouth to a point 100 yards above the bridge on Route 15 in Abbott Village – Class B-2.

9. Phillip Brook, Monson, from Lake Hebron to the junction with Monson Stream Class C.

10. Piscataquis River below the dam near the mouth of the river at Howland - Class C.

11. Piscataquis River from the dam at Howland to the Penobscot River runaround Class B-2.

12. Piscataquis River, main stem, from Abbot-Guilford town line to the railroad bridge approximately 1 mile east of Merrill Brook confluence – Class C.

1967, c. 304, § 14.

13. Piscataquis River, main stem, from East Dover to the junction with Pleasant River – Class C.

14. Piscataquis River, main stem, from junction with Pleasant River to Schoodic Stream confluence – Class B-2.

15. Piscataquis River, main stem, from Abbot-Guilford town line to mouth of Kingsbury Stream – Class B-2.

16. Pleasant River, main stem, from its mouth to the end of Maple Street in Brownville Junction – Class C.

17. Sebec River, main stem, from its mouth to the dam at Main Street in Milo – Class C.

18. Sebec River and its tributaries above the outlet of Monson Stream – Class A.

1954, c. 79, § 15.

19. Piscataquis River, main stem, from the railroad bridge approximately 1 mile east of Merrill Brook confluence to the bridge at East Dover – Class C.

1967, c. 304, § 15; 1971, c. 138, § 1.

West Branch Penobscot River Drainage System

1955, c. 322, § 2

1. All waters, tributaries and segments thereof of the Penobscot River Drainage System, not otherwise specified or classified, upstream of the outlets of Ferguson Lake and Quakish Lake and North Twin Dam – Class B-1.

2. Penobscot River and its tributaries above Seboomook Lake – Class A.

1954, c. 79, § 15.

3. That portion of the main stem of the Penobscot River (West Branch) between the outlet of Ferguson Lake and of Quakish Lake and North Twin Dam at the outlet of North Twin Lake or Elbow Lake, which would include the reservoirs known as Quakish Lake and Ferguson Lake – Class B-2.

4. Tributaries, direct and indirect, and segments thereof, of the West Branch of the Penobscot River from the outlet of Quakish and Ferguson Lakes (Millinocket) to its confluence with the East Branch; with the exception of the segments of Millinocket Stream (Millinocket) between the railroad bridge and the West Branch of the Penobscot River – Class B-1.

5. Segments of Millinocket Stream (Millinocket) between the railroad bridge near the Millinocket-Indian Purchase town boundary and the Penobscot River – Class D.

1965, c. 179, § 2.

Schedule of Completion Applicable to Certain Waters of the Penobscot River Basin

1965, c. 179, § 2

1. The classification set forth as follows shall become effective on October 1, 1965.

A. Subsections 1, 2 and 3 under main stem;

B. Subsection 5 under West Branch Penobscot River Drainage System.

2. A municipality, sewer district, person, firm, corporation or other legal entity shall not be deemed in violation of these sections at any time or times prior to October 1, 1976 with respect to those classifications if by such time or times he or it with respect to any project necessary to achieve compliance with applicable classification shall have completed all steps required to then be completed by the following schedule.

A. Preliminary plans and engineers' estimates involving municipal and other publicly owned projects shall be completed on or before October 1, 1968 and plans for required abatement steps by others shall be submitted and approved not later than October 1, 1969.

B. Arrangements for administration and financing shall be completed on or before October 1, 1971. In the case of municipal projects this period is to include definite scheduling of grants-in-aid.

C. Detailed plans and specifications shall be approved by the Board of Environmental Protection and construction begun prior to June 1, 1973.

D. All requirements are to be completed and in operation on or before October 1, 1976.

1965, c. 179, § 2; 1967, c. 475, § 7; 1972, c. 618.

Presumpscot River Basin (Includes all drainage area above the Presumpscot Falls Dam)

1957, c. 322, § 6

1. All waters, tributaries and segments of the Presumpscot River Basin, not otherwise specified or classified, with the exception of the Presumpscot River, main stem, below the upstream compact limits of Westbrook – Class B-1.

2. Frank Brook, and Pleasant River above its confluence with Frank Brook, together with tributaries thereof – Class B-2.

3. Little River, main stem, (Windham) from canning plant on Route 114 to its confluence with the Presumpscot River – Class C.

4. Outflow from Panther Pond to Sebago Lake – Class B-2.

5. Outlet of Tuttle Pond, Windham – Class B-2.

6. Pleasant River, and tributaries between Frank Brook (Gray) and its entrance to Little Sebago Lake – Class B-2.

7. Presumpscot River, main stem, below Village of South Windham to tidewater – Class C.

1967, c. 446.

7-A. Presumpscot River, main stem, from the outlet of Sebago Lake to the dam at Dundee – Class A.

1972, c. 612.

8. Second westerly tributary of the North Branch of Little River (Windham) – Class B-2.

9. Stevens Brook, Bridgton – Class C.

1967, c. 304, § 16.

10. Tannery Brook, and its tributaries, Gorham – Class B-2.

11. Tributaries, direct and indirect, of Songo Pond (Albany vicinity) – Class B-2.

12. Tributaries of Papoose Pond(Waterford) – Class B-2.

13. Tributaries of Coffee and Dumpling Ponds, Casco, above inlet to Pleasant Lake – Class B-2.

14. Unnamed stream, entering Sebago Lake at North Sebago Village – Class B-2.

Saco River Basin

1957, c. 322, § 7

Main Stem, Saco River

1. All portions of the main stem, Saco River, above tidewater not otherwise specified or classified – Class B-1.

2. Saco River, main stem, from Route 5 (Fryeburg-Lovell road) to a point ¾ mile below the Fryeburg-Lovell road – Class B-2.

3. Saco River, main stem, from junction with Ossipee River to the entrance of Quaker Brook – Class B-1.

1973, c. 401.

4. Saco River, main stem, from entrance of Quaker Brook to the Central Maine Power Co. dams at Bar Mills – Class B-1.

1967, c. 180, § 1; 1973, c. 401.

5. Saco River, main stem, from the Central Maine Power Co. dams at Bar Mills to the Route #4-A highway bridge at Salmon Falls village – Class B-2.

1967, c. 180, § 1; 1973, c. 401.

6. Saco River, main stem, from Union Falls Dam to Thatcher Brook – Class B-2.

1973, c. 401.

7. Saco River, main stem, from Thatcher Brook to tidewater – Class C.

1967, c. 180, § 1; 1973, c. 401.

Tributaries, Saco River

1. All tributaries, direct and indirect, and segments thereof, of the Saco River Drainage, above tidewater, not otherwise specified or classified – Class B-1.

2. Brown Brook, Limerick, main stem, from outlet of Holland Pond to junction with Little Ossipee River – Class C.

3. Goodwins Mills Brook, main stem, from 0.5 mile above crossing of Route 35 at Goodwins Mills to Saco River – Class B-2.

4. Kimball Brook, vicinity North Fryeburg, from point 0.5 mile above Route 113 crossing to Charles Pond – Class C.

5. Little River, from crossing of Route 5 approximately 1.0 mile above Cornish Village to its outlet to the Ossipee River – Class C.

1967, c. 180, § 2.

6. Ossipee River, main stem, from 0.5 mile upstream of Route 25 bridge at Kezar Falls to the entrance of Wadsworth Brook – Class C.

1967, c. 180, § 2.

7. Ossipee River, main stem, from entrance of Wadsworth Brook to junction with Saco River – Class C.

8. Wards Brook (Ward Pond to outlet of brook) – Class C.

St. Croix River Basin

1. All tributaries of the St. Croix River upstream from the dam at Calais, the drainage areas of which are wholly within the State of Maine, and including the West Branch of the St. Croix River and its tributaries which enter through Grand Lake Flowage – Class A.

1954, c. 79, § 15.

2. Waters of the St. Croix River Watershed, within the State of Maine, not otherwise classified, including those of the Main Stem of the St. Croix River and of Monument Brook on the Maine side of the international boundary above the Grand Falls Dam – Class B-2.

1967, c. 156; 1977, c. 373, § 27.

3. Waters of the St. Croix River Watershed, within the State of Maine, not otherwise classified, including those of the Main Stem of the St. Croix River on the Maine side of the international boundary from the Grand Falls Dam to the head of tide – Class C.

1977, c. 373, § 27-A.

St. John River Basin

Allagash River Drainage Area – Class A

1954, c. 79, § 15

Fish River Drainage Area

1955, c. 322, § 5

1. All waters, segments and tributaries of the Fish River Drainage not otherwise specified or classified – Class B-2.

2. Fish River and its tributaries above the highway bridge over the Fish River at the outlet of St. Froid Lake on Highway Route 11 – Class A.

1954, c. 79, § 15.

3. Fish River from the bridge at Fort Kent Mills to the Route 11 Bridge near the foot of St. Froid Lake – Class B-1.

4. Fish River main stem, from bridge at Fort Kent Mills to confluence with St. John River – Class C.

1967, c. 304, § 17.

Main Stem, St. John River

1969, c. 268.

1. St. John River, main stem, above the International Bridge Fort Kent – Class B-1.

2. St. John River, main stem, from the International Bridge Fort Kent to the Frenchville-Madawaska town line – Class B-2.

3. St. John River, main stem, from the Frenchville-Madawaska town line to the Canadian border – Class C.

Tributaries, St. John River

1969, c. 268

1. All waters of the St. John Drainage Basin not otherwise specified or classified which receive drainage from lands entirely within the United States – Class B-1.

2. All tributaries direct and indirect of the St. John River not wholly in the State of Maine, on the Maine side of the international border not otherwise specified or classified – Class B-2.

3. All tributaries of the St. Francis River, the drainage areas of which are wholly within the State of Maine – Class A.

4. All tributaries and branches of the St. John River above the outlet of Allagash River, the drainage areas of which are wholly within the State of Maine, including that portion of the river above the St. John Pond Dam – Class A.

5. All streams and tributaries, unless otherwise specified or classified, entering the St. John River in Fort Kent, Frenchville, Madawaska (including the upper portion of Martin Brook), Grand Isle, Van Buren, St. John Plantation and Hamlin Plantation – Class B-2.

6. Martin Brook, Madawaska, downstream of the bridge on the Back Settlement Road – Class C.

7. Negro Brook, Allagash Plantation, and its tributaries – Class A.

8. Oquisiquit Brook and its tributaries, Mars Hill and Easton, above the Canadian border – Class B-2.

9. Riviere des Chutes, Easton and Mars Hill, above the Canadian border – Class B-1.

10. Thibodeau Brook, Grand Isle, from Route 1 to the St. John River – Class C.

11. Violette Brook Van Buren, below the railroad to confluence with Violette Stream – Class C.

12. Violette Stream, Van Buren, below Champlain Street to the junction with the St. John River – Class C.

13. Prestile Stream – Class B-2.

1965, c. 42, § 2; 1967, c. 304, § 18; 1969, c. 268; 1977, c. 373, § 27-B.

Salmon Falls-Piscataqua River Basin

1. Waters not previously classified of the main stem and direct and indirect tributaries of the Salmon Falls and Piscataqua Rivers, within the State of Maine, above tidewater – Class B-1.

1961, c. 321, § 1.

R.S. 1954, c. 79, § 15; 1955, c. 426, §§ 1, 2, 4; 1957, c. 322, §§ 1-8; c. 412; 1961, c. 330; 1963, c. 274, § 4.

§ 369. Coastal streams

1971, c. 470, § 5.

Cumberland County

1959, c. 133, § 1

Those waters draining directly or indirectly into tidal waters of Cumberland County with the exception of the Presumpscot River Drainage Area upstream from the Presumpscot Falls Dam and the Androscoggin River Basin Drainage Area.

1. All coastal streams, direct and indirect segments thereof, draining to tidewater of Cumberland County, not otherwise specified or classified – Class C.

2. **Brunswick.** Unnamed Stream entering tidewater of New Meadows River at Middle Bay – Class A.

3. **Cape Elizabeth.** Alewife Brook – Class A.

4. **Falmouth.** Mill Creek and tributaries thereof – Class B-2.

5. **Falmouth and Portland.** Unnamed Stream forming a portion of the Portland-Falmouth town line and located on the southwesterly shore of the Presumpscot River estuary – Class D.

6. **Freeport.**

A. Harvey Brook – Class B-1.

B. Frost Gully Brook – Class A.

C. Merrill Brook – Class B-2.

6-A. **Gray.**

A. Collier Brook – Class B-2.

1965, c. 153.

7. **Portland.** Stroudwater River from its origin to its confluence with Indian Camp Brook – Class B-2.

7-A. **Pownal.** Chandler Brook – Class B-2.

1967, c. 17.

8. **Scarboro.**

A. Finnard Brook – Class B-2.

B. Phillips Brook – Class C.

1967, c. 304, § 19.

C. Stuart Brook – Class B-2.

9. **South Portland.** Red Brook from the Rye Pond outlet dam to its origin and tributaries thereof – Class B-2.

10. **Yarmouth.**

A. Pratts Brook – Class B-1.

B. Royal River, main stem, from its origin to the Gray-New Gloucester town line intersection – Class B-2.

Hancock County

1955, c. 426, §§ 1-7

Those waters draining directly or indirectly into tidal waters of Hancock County with the exception of those tributary to the Penobscot River Estuary north of a line drawn due east from Fort Point in Stockton Springs.

1. All coastal streams, direct and indirect segments thereof, draining to tidewaters of Hancock county, not otherwise specified or classified, with the exception of those tributary to the Penobscot River Estuary north of a line drawn due east from Fort Point in Stockton Springs – Class B-1.

2. **Blue Hill.**

A. Carleton Stream, main stem, between First Pond and Second Pond – Class C.

1977, c. 373, § 28.

B. Carleton Stream, main stem, from the outlet of First Pond to tidewater at Salt Pond – Class C.

1977, c. 373, § 28.

C. Unnamed stream at edge of Blue Hill Village entering tidewater near "Big Rock" – Class C.

1967, c. 304, § 20.

D. Unnamed stream flowing from near "Old Cemetery" to the Town Wharf – Class C.

1967, c. 304, § 20.

E. Mill Brook Stream from a point just above the sewer of the consolidated school to its outlet at tidewater – Class B-1.

1977, c. 373, § 28.

F. Unnamed Stream about 100 yards east of Mill Brook Stream – Class C.

1967, c. 304, § 20.

3. **Brooksville.**

A. Outlet of Walker Pond, from the dam at Lymeburner's Mill to tidewater – Class B-2.

B. Shepardson Brook (or Mill Brook), main stem, from Route 176 to its outlet at tidewater – Class C.

4. **Ellsworth.**

A. Card Brook, main stem, from the Farm Pond about 250 yards west of U.S. Highway No. 1 to tidewater – Class B-2.

1963, c. 23.

B. Gilpatrick Brook, main stem, from bridge at U.S. Highway No. 1 to its outlet into the Union River – Class B-2.

C. Union River, main stem, from head of Graham Lake to bridge at U.S. Highway No. 1 at Ellsworth Falls – Class B-2.

D. Union River, main stem, from bridge at U.S. Highway No. 1 at Ellsworth Falls to tidewater – Class C.

E. Unnamed Stream south of Laurel Street in Ellsworth – Class C.

5. **Franklin.** Unnamed Stream flowing near railroad station in Franklin Village to Hop Bay – Class C.

6. **Gouldsboro.** All coastal streams, direct and indirect segments, discharging to tidewater on the easterly mainland of Gouldsboro – Class C.

7. **Lamoine.** Spring Brook below washer at Grindle's gravel pit – Class C.

8. **Penobscot.**

A. Clements Brook, main stem, from tidewater to a point 100 feet upstream of Route 166 Class B-2.

B. Tributary of Winslow Stream entering from the south of South Penobscot Village from its confluence with Winslow Stream to the crossing of Route 177 Class B-2.

C. Winslow Stream, main stem, from tidewater to dam at the sawmill of S. C. Condon Class C.

1967, c. 304, § 21.

9. **Sedgwick.**

A. Sargent Brook at Sargentville Village, main stem, from tidewater to a point 300 feet upstream of the highway – Class C.

B. Three Unnamed Streams entering tidewater immediately north of Sedgwick Village Class C.

C. Unnamed Stream entering tidewater at the head of Salt Pond near North Sedgwick Class B-2.

10. **Trenton.** Stony Brook from Route 3 crossing to tidewater – Class C.

11. **Waltham.** Webb Brook, main stem, from dam immediately downstream of bridge on Route 179 to its outlet to Graham Lake – Class B-2.

12. **Winter Harbor.** Coastal streams between the southerly point of Schoodic Peninsula to the Winter Harbor-Gouldsboro town line – Class C.

Knox County

1955, c. 426, § 1

St. George River Drainage System

1. All segments and tributaries direct and indirect of the St. George River Drainage System, above tidewater, not otherwise defined or classified – Class C.

2. All segments and tributaries direct and indirect of the St. George River above the outlet of St. George Lake in Liberty – Class B-1.

3. Castner Brook below Hillcrest Poultry Plant – Class C.

4. Crawford Pond Outlet and Crawford Pond tributaries – Class B-1.

5. Fuller Brook and its tributaries – Class B-1.

6. North and South Pond tributaries and outlet to the St. George River – Class B-1.

Other Coastal Streams of Knox County

1. **Camden.**

A. All coastal stream, direct and indirect segments thereof, draining to tidewater in the Town of Camden, not otherwise specified or classified – Class B-1.

B. Megunticook River, main stem, below a point 300 feet above the dam at the Mount Battie Mill Class B-2.

1977, c. 373, § 29.

2. **Cushing.**

A. All coastal stream, direct and indirect segments thereof, draining to tidewater in the Town of Cushing Class B-1.

3. **Friendship.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewater in the Town of Friendship unless otherwise specified or classified – Class B-1.

B. Goose River, main stem, tidewater to dam at the Herbert Tibbetts' sawmill – Class C.

C. Goose River, main stem, from Tibbetts' sawmill dam to the outlet of Havener Pond Class B-2.

4. **Owls Head.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewater in the Town of Owls Head – Class C.

5. **Rockland.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewater in the City of Rockland – Class C.

6. **Rockport.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewater in the Town of Rockport, unless otherwise described or classified – Class C.

B. Goose River and its tributaries below the highway bridge near Simonton Corners – Class B-2.

C. Goose River and its tributaries above the highway bridge near Simonton Corners – Class B-1.

D. Lily Pond outlet – Class B-2.

7. **St. George.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewater in the Town of St. George, unless otherwise described or classified – Class C.

B. Unnamed Stream and its tributaries above tidewater, entering tidewater at the northwesterly corner of Tenant's Harbor – Class B-1.

C. Unnamed Stream and its tributaries, above tidewater, entering tidewater at the head of Long Cove – Class B-1.

8. **South Thomaston.**

A. All coastal streams, direct and indirect segments thereof, drainage to tidewater in the Town of South Thomaston – Class C.

9. **Thomaston.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewater in the Town of Thomaston, unless otherwise described or classified – Class B-1.

B. Mill River, main stem, from tidewater to a point ½ mile above tidewater – Class C.

C. Oyster River, main stem, from tidewater to a point 200 feet upstream of Packard's Mill – Class C.

D. Oyster River, main stem, from a point 200 feet upstream of Packard's Mill to the junction with the tributary of which is the outlet of Rocky Pond – Class B-2.

E. Tributary of Oyster River, main stem, coming from Rocky Pond between the Route 17 bridge at West Rockport and the junction with Oyster River – Class B-2.

F. Unnamed Stream flowing from Mace's Pond to Chickawaukee Pond – Class B-2.

10. **Warren.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewaters of the St. George River Estuary unless otherwise specified or classified – Class B-1.

B. Oyster River. See: Thomaston above.

C. Unnamed Stream and its tributaries to St. George River tidewater near Warren-Cushing boundary upstream of a point 500 feet above South Warren-North Cushing Road. Class B-2.

D. Unnamed Stream to St. George River tidewater near Warren-Cushing boundary between a point 500 feet above the South Warren-North Cushing road to tidewater – Class C.

E. Unnamed Stream and its tributaries above tidewater which enters tidewater of the St. George River ½ mile below the South Warren bridge – Class B-2.

11. Other coastal streams. All coastal streams, direct and indirect segments thereof, draining to the tidal waters of Knox County, not otherwise specified or classified – Class B-1.

1973, c. 423, § 4.

Lincoln County

1955, c. 426, § 1

Those waters draining directly or indirectly into tidal waters of Lincoln County.

Damariscotta River Drainage

1. All segments and tributaries of the Damariscotta River, not otherwise defined, above tidewater Class B-1.

2. Damariscotta River, main stem, from the outlet of Damariscotta Lake to tidewater at Salt Bay – Class B-2.

3. Inlet of Damariscotta Lake at Jefferson Village, from the outlet of the mill pond above Jefferson Village to the lake – Class B-2.

Medomak River Drainage

1. All segments and tributaries of the Medomak River Drainage, not otherwise defined or classified, above tidewater – Class B-2.

2. Repealed. 1965, c. 425, § 22.

3. Tributaries of Little Medomak Brook, principally in the Town of Washington Class B-1.

Sheepscot River Drainage

1. All segments and tributaries of the Sheepscot River Drainage above tidewater not otherwise defined or classified – Class B-1.

2. Sheepscot River, main stem, from tidewater to junction of East and West Branches – Class B-2.

3. Sheepscot River, West Branch main stem, from outlet of Branch Pond to junction of the East and West Branches – Class B-2.

4. Turner Pond outlet in Somerville Plantation from Turner Pond to Long Pond – Class B-2.

Other Coastal Streams of Lincoln County

1. **Alna.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewater in the Town of Alna, not otherwise specified or classified, with the exception of the Sheepscot River Drainage above tidewater – Class B-1.

B. Ben Brook, main stem, downstream of the second road crossing above its mouth – Class B-2.

C. Unnamed Stream and its tributaries entering tidewater of the Sheepscot River at a point approximately one mile due east of the Alna Cemetery – Class B-2.

D. Unnamed Stream at Head Tide Village entering the Sheepscot River about 0.15 mile below the Route 218 crossing – Class B-2.

2. **Boothbay.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewater in the Town of Boothbay, not otherwise specified or classified – Class B-2.

B. Adams Pond – Class B-1.

3. **Boothbay Harbor.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewater in the Town of Boothbay Harbor, not otherwise specified or classified – Class B-2.

B. Meadow Brook and its tributaries entering Lewis Cove – Class B-1.

C. Unnamed Brook and its tributaries entering the most easterly cove of Campbell Pond – Class B-1.

4. **Bremen.**

A. All coastal streams, direct and indirect segments thereof, draining to tidewater in the Town of Bremen – Class B-1.

5. **Bristol.**

A. All coastal streams entering tidewater between the Bristol-Damariscotta town line and the Bristol-South Bristol town line -- Class B-2.

B. All coastal streams entering tidewater between the Bristol-South Bristol town line and the head of tide on the Pemaquid River, not otherwise specified or classified – Class B-2.

C. All coastal streams entering tidewater between the head of tide on the Pemaquid River and the Bristol-Bremen town line, not otherwise specified or classified – Class B-1.

D. Pemaquid River, segments and tributaries thereof, not otherwise defined, above tidewater – Class B-1.

E. Pemaquid River, main stem, entrance to Boyd Pond to tidewater – Class B-2.

F. Pemaquid River, main stem, from dam upstream of Bristol Village to the entrance of Boyd Pond – Class C.

G. Unnamed Stream entering a cove in the tidewater of Pemaquid River immediately west of Pemaquid Village – Class B-1.

H. Unnamed Stream, above tidewater, entering Buck Cove in the Town of Bristol – Class B-2.

6. **Damariscotta.**

A. All coastal streams entering tidewaters of the Damariscotta River – Class B-2.

7. **Dresden.** See: Section 368, Kennebec River.

8. **Edgecomb.**

A. All coastal streams, segments and tributaries thereof, draining to tidewater in the Town of Edgecomb, not otherwise specified or classified – Class B-1.

B. All coastal streams, segments and tributaries thereof, draining to tidewater between (not including) the outlet of Lily Pond to the Edgecomb-Boothbay town line – Class B-2.

C. All coastal streams, segments and tributaries thereof, draining to tidewater between the Edgecomb-Boothbay line on the Damariscotta River and Bennett Neck – Class B-2.

9. **Newcastle.**

A. All coastal streams draining to tidewaters of the Damariscotta River in the Town of Newcastle – Class B-1.

B. All coastal streams draining to tidewaters of the Sheepscot River Estuary in the Town of Newcastle – Class B-1.

10. **Nobleboro.**

A. All coastal streams draining to tidewaters of the Damariscotta River in the Town of Nobleboro – Class B-2.

11. **South Bristol.**

A. All coastal streams and segments thereof draining to tidewaters in the Town of South Bristol, unless otherwise specified or classified – Class B-2.

B. Unnamed Stream entering tidewaters about ½ mile above Prentiss Cove at the Bristol-South Bristol boundary – Class B-1.

12. **Southport.**

A. All coastal streams and segments thereof draining to tidewaters in the Town of Southport – Class B-1.

13. **Waldoboro.**

A. All coastal streams and segments thereof draining to tidewaters in the Town of Waldoboro, except as otherwise specified or classified and with the exception of the Medomak River and its tributaries above head of tide – Class B-1.

1963, c. 54, § 2.

B. Goose River. See: Knox County Coastal Streams.

14. **Westport.**

A. All coastal streams and segments thereof draining to tidewaters in the town of Westport — Class C.

1967, c. 304, § 22.

15. **Wiscasset.**

A. All coastal streams and segments thereof draining to tidewaters in the Town of Wiscasset, not otherwise specified or classified — Class B-1.

B. Unnamed Stream and tributaries entering tidewater by way of Chewonke Creek — Class B-2.

C. Unnamed Stream and tributaries in Wiscasset entering the tidal estuary which lies immediately west of Bailey Point — Class B-2.

D. Ward Brook and tributaries — Class B-2.

16. Other coastal streams. All coastal streams, direct and indirect segments thereof, draining to the tidal waters of Lincoln County, not otherwise specified or classified — Class B-1.

1973, c. 423, § 5.

Sagadahoc County

Those streams above tidewater which drain to tidal waters of Sagadahoc County, directly or indirectly, not including that portion of Merrymeeting Bay north and west of the Chops at Bath or those streams draining to the Androscoggin River Estuary — Class C.

1967, c. 304, § 23.

Waldo County

1955, c. 426, §§ 1-7

Those streams above tidewater which drain to tidal waters of Waldo County between the Waldo-Knox County line to Fort Point in Stockton Springs.

1. Coastal streams, segments and tributaries thereof, not otherwise described, above tidewater, entering tidewater between the Knox-Waldo County line and the head of tide on the Little River at the Northport-Belfast boundary — Class B-1.

2. Coastal streams, segments and tributaries thereof, not otherwise defined, above tidewater, entering tidewater between the head of tide on Goose River and Fort Point in Stockton Springs — Class C.

3. Ducktrap River, segments and tributaries thereof, not otherwise described, above tidewater — Class B-1.

4. Goose River (Belfast), main stem, below the upstream crossing of Route 101 — Class C.

5. Goose River (Belfast), segments and tributaries thereof, not otherwise defined, above tidewater — Class B-2.

6. Little River, Northport-Belfast, segments and tributaries thereof, not otherwise defined, above tidewater — Class B-1.

7. Mill Brook and its tributaries in Searsport upstream of a bridge site on an abandoned road about 1½ miles northerly of the village at Searsport which includes McClures Pond and Cain Pond — Class B-1.

8. Mixer Pond (Morrill and Knox) tributaries — Class B-1.

9. Passagassawaukeag River, segments and tributaries thereof, not otherwise defined, above tidewater — Class B-2.

10. Passagassawaukeag River Drainage above the outlet of Ellis Pond, to include Ellis Pond, Halfmoon Pond, Passagassawaukeag Lake and their respective tributaries — Class B-1.

11. Sanborn Pond and Dutton Pond tributaries in Morrill and Brooks – Class B-1.

12. Shaw Brook and its tributaries in Northport – Class B-2.

13. Unnamed Stream entering tidewater at Lincolnville Beach -- Class B-2.

14. Unnamed Stream and its tributaries entering tidewater at the northwest corner of Long Cove -- Class B-1.

15. Wescott Stream, entering tidewater in Belfast, segments and tributaries thereof not otherwise defined, above tidewater – Class B-1.

16. Other coastal streams of Waldo County. All coastal streams, direct and indirect segments thereof, draining to the tidal waters of Waldo County, not otherwise specified or classified – Class B-1.

1973, c. 423, § 6.

Washington County

1955, c. 426, § 7

Those streams above tidewater which drain to tidal waters of Washington County, directly or indirectly, including those which drain to the tidal waters of the St. Croix River.

1. All coastal streams, segments and tributaries thereof, not otherwise defined, above tidewater, entering the tidal waters of Washington County from the Washington-Hancock County line to and including those to the tidal waters of the St. Croix River – Class B-1.

2. Boyden Stream, main stem, from the outlet of Boyden Pond to the first road crossing below Boyden Pond – Class B-2.

3. Chandler River and its tributaries above the Highway Bridge on Route 1 – Class A.

4. Dennys River and its tributaries above the Highway Bridge on Route 1 in the Town of Dennysville – Class A.

5. Dennys River, main stem, from tidewater to the Bridge at U.S. Highway No. 1 at Dennysville – Class B-2.

6. Dyke Brook, East Branch, main stem in Columbia from tidewater to the crossing of the Maine Central Railroad – Class C.

7. East Machias River and its tributaries above the Highway Bridge on Route 191 – Class A.

8. East Machias River, main stem, from head of tide to a point 2,000 feet upstream of the dam of the Bangor Hydro-Electric Co. – Class C.

9. Machias River and its tributaries above the mill pond at Whitneyville – Class A.

10. Machias River, main stem, from the dam creating the mill pond in Whitneyville to the site of the low dam opposite the ends of West Street and Hardwood Street in Machias – Class B-2.

11. Machias River, main stem, between the site of the low dam approximately opposite the ends of West Street and Hardwood Street in Machias to the head of tide – Class C.

12. Middle River, main stem, between the 2nd upstream crossing of Route 192 and tidewater – Class B-2.

13. Narraguagus River, East and West Branches and their tributaries, above the confluence of the 2 streams – Class A.

14. Narraguagus River, main stem, between tidewater and the bridge of the Maine Central Railroad – Class B-2.

15. Orange River and its tributaries above the highway bridge on Route 1 – Class A.

16. Orange River, main stem, between tidewater and the highway bridge at U.S. Highway No. 1 in Whiting – Class B-2.

17. Pennamaquan River, main stem, between the crossing of the Eastport Branch of the Maine Central Railroad and tidewater – Class B-2.

18. Pleasant River, main stem, from tidewater to a point 1,000 feet above tidewater -- Class B-2.

19. Tributary of Tunk Stream, the outlet of Round Pond, from Round Pond to the confluence with the main stem of Tunk Stream – Class B-2.

20. Tunk Stream, main stem, from the bridge at Unionville to tidewater – Class B-2.

21. Unnamed Stream entering northerly end of Brooks Cove in Robbinston – Class C.

22. Unnamed Stream immediately north of Schoolhouse Lane in Robbinston – Class C.

23. Unnamed Stream at easterly edge of Columbia Falls Village from tidewater to Maine Central Railroad near Pleasant River Canning Company plant – Class C.

24. Unnamed Stream entering tidewater portion of St. Croix River at Calais crossing North Street between Beech and Union Streets – Class C.

1971, c. 138, § 2.

25. Unnamed Stream passing through Harrington Village, the segment thereof, between tidewater and a point immediately upstream of the school sewer – Class C.

26. Unnamed Stream flowing through Dennysville Village immediately west of school building – Class B-2.

27. Whitten Parrin Stream in T7, S.D. and Steuben – Class C.

28. Wiggins Brook at South Trescott, main stem, between Route 191 and tidewater – Class C.

York County

1957, c. 322, § 8.

Those streams above tidewater which drain to tidal waters of York County with the exception of those streams draining to the inland waters of the Piscataqua-Salmon Falls River Drainage, the Presumpscot River Drainage, the Mousam River Drainage and the Saco River Drainage.

1. All coastal streams draining directly or indirectly to the tidal waters of the Salmon Falls-Piscataqua River north of Sisters Point in Kittery – Class B-1.

2. All coastal streams above tidewater between Roaring Rock Point (York) and the head of tide on Branch River (Wells) except as otherwise specified or classified – Class C.

3. All coastal streams and their tributaries not otherwise specified between Walker Point (Kennebunkport) and Fletchers Neck in Biddeford – Class C.

4. All coastal streams above head of tide and tributaries thereof not otherwise designated or classified entering tidewater from Fletchers Neck, Biddeford, to the York-Cumberland County line Class B-2.

5. Biddeford-Unnamed streams and tributaries, the main stem of which crosses Route 9 two-tenths of a mile southerly of the intersection of Route 9 and Guinea Road Class C.

6. Branch River (Brook), Wells Class B-1. Goosefare Brook (Saco), from its origin ot

7. Goosefare Brook (Saco), from its origin to head of tide Class C.

8. Josias River Tributary and branches thereof, entering from the north approximately 2½ miles above tidewater Class B-2.

9. Kennebunk River and tributaries not otherwise classified including streams entering tidewater portion of Kennebunk River Class B-2.

10. Milliken Brook (Saco) – Class C.

11. Webhannet River and tributaries Class B-2.

12. West Brook (Biddeford) and tributaries above head of tide Class C.

13. Coastal streams and direct or indirect tributaries thereof above head of tide, not otherwise designated or classified, which enter the tidal waters of York County Class B-2.

1970, c. 538, § 1.

R.S. 1954, c. 79, § 15; 1955, c. 426, §§ 1-3, 5, 7; 1957, c. 322, § 8; 1959, c. 183, §§ 1, 2; 1963, c. 23; c. 54, § 1; c. 420, § 2.

§ 370. Tidal waters

Cumberland County

1963, c. 274, § 3

All tidal waters of Cumberland County with the exception of those in or bordering on the tidal estuary of the Androscoggin River and Merrymeeting Bay.

1. **Brunswick.**

A. Tidal waters of the Town of Brunswick except those in or bordering on the tidal estuary of the Androscoggin – Class SB-1.

2. **Cape Elizabeth.**

A. All tidal waters of Cape Elizabeth not otherwise specified – Class SB-2.

B. From a point where longitude 70°-16'-40" (just north of Higgins Beach) crosses the Scarboro mainland to a point where longitude 70°-16'-14" (about one mile south of the mouth of the Spurwink River estuary) crosses the Cape Elizabeth mainland, including the Spurwink River estuary to head of tide and tidal tributaries thereof – Class SC.

C. Waters surrounding Richmond Island – Class SB-1.

D. From the southernmost point of land at Mackenney Point to the easternmost point of land on the Cape Elizabeth mainland – Class SA.

E. From a point directly west of Chimney Rock to the Cape Elizabeth-South Portland line – Class SC.

3. **Cumberland.**

A. From Cumberland-Falmouth town line to Cumberland-Yarmouth town line – Class SB-2.

B. Waters of Great Chebeague Island not specifically designated – Class SA.

C. Waters of Great Chebeague Island from the northernmost point of land southeast to latitude 43°45' (approximately ½ mile of shoreline) – Class SB-1.

D. Waters of Great Chebeague Island in Coleman Cove east of longitude 70°-07'-37" – Class SB-2.

E. Waters surrounding islands in the Town of Cumberland not specifically designated – Class SA.

4. **Falmouth.**

A. Presumpscot River estuary from head of tide to Route 9 crossing – Class SC.

1967, c. 447, § 2.

B. Presumpscot River estuary from the Route 9 crossing to the Route 1 crossing – Class SC.

C. From the Route 1 crossing northeast to a point where longitude 70°-13'-40" (about one mile north of Mackworth Point) crosses the Falmouth mainland – Class SC.

D. Waters surrounding Mackworth Island – Class SC.

E. All other waters of Falmouth not otherwise designated – Class SB-2.

5. **Freeport.**

A. All waters in the Town of Freeport – Class SB-2.

6. **Harpswell.**

A. All waters in the Town of Harpswell – Class SB-1.

7. **Portland.**

A. All tidal waters within the City of Portland not otherwise specified – Class SC.

B. All tidal waters east of longitude 70°-10' not otherwise specified – Class SA.

C. Northerly shore line of Fore River and Portland Harbor from the Vaughn Bridge crossing to the most easterly point of land on the Portland mainland – Class SC.

1967, c. 447, § 1.

D. All waters west of Grand Trunk Bridge which includes Back Cove Class SC.

1967, c. 447, § 1.

E. Presumpscot River estuary from head of tide to Route 9 bridge - Class SC.

1967, c. 447, § 1.

F. Waters of Peaks Island from the most northerly point of land on the island to a point where latitude 43°-39'-52" crosses the easterly shoreline (approximately one mile of shoreline) Class SB-2.

G. Waters of Peaks Island from a point where latitude 43°-39'-52" crosses the easterly shore line to the southernmost point of land on the island - Class SB-1.

H. Waters on the easterly shore of Little Diamond Island from the southernmost point of land to the northernmost point of land on the island - Class SB-2

I. From the most westerly point of land on Long Island to the most northerly land formation on the island – Class SB-2.

J. From the most northerly land formation on Long Island to the most westerly point of land on the island in a southeasterly direction with the exception of Harbor Grace north of latitude 43°-41'-21" Class SB-1.

K. Waters of Harbor Grace north of latitude 43°-41'-21" on Long Island – Class SB-2.

L. Waters on the easterly shore line of Cushing Island from the northernmost point of land to the southernmost point of land on the island – Class SB-2.

8. Scarboro.

A. All tidal waters in the Town of Scarboro not otherwise designated – Class SB-2.

B. Nonesuch River estuary from head of tide to the B. & M. (Dover line) railroad crossing – Class SC.

C. Little River estuary from head of tide to its confluence with the Scarboro River and tidal tributaries thereof – Class SC.

D. Dunstan River estuary from head of tide to its confluence with the Scarboro River and tidal tributaries thereof – Class SB-1.

1965, c. 84.

E. Libby River estuary from head of tide to a point where longitude 70°-19' (about 1½ miles below the Route 207 crossing) crosses the estuary, and tidal tributaries thereof Class SB-1.

F. From a point directly west of the most northerly point of land on Shooting Rock Island to a point on the mainland directly north of Cool Rock – Class SA.

1973, c. 267.

G. From a point where longitude 70°-16'-40" crosses the Scarboro mainland to a point where longitude 70°-16'-14" (a point about a mile south of the confluence of the Spurwick River estuary) crosses the Cape Elizabeth mainland including the Spurwink River estuary to head of tide and tidal tributaries thereof - Class SC.

8-A. South Portland.

A. All tidal waters in the City of South Portland – Class SC.

1965, c. 425, § 23.

9. Yarmouth.

A. All tidal waters of the Town of Yarmouth not otherwise designated – Class SB-2.

B. Waters of Little John Island from the northernmost point of land on the island southeast to a point where longitude 70°-07'-32" intersects the shore line – Class SB-1.

Hancock County

1963, c. 320

1. **Bar Harbor.**

A. Tidewater from a point 500 yards south of Bear Brook to the Mount Dessert-Bar Harbor town line, with the exception of Otter Cove north of latitude 44°-18.75' – Class SA.

B. Tidewaters within the Town of Bar Harbor not specifically mentioned or described – Class SB-1.

1968, c. 516, § 1.

2. **Blue Hill.**

A. Tidewater from Sand Point and southerly a distance of 500 yards – Class SB-2.

B. Tidewaters of Salt Pond – Class SB-1.

C. Tidewater from the most southerly bridge crossing at Salt Pond at the "Nub" northerly and easterly including all bays and estuaries to the Blue Hill-Surry town line – Class SB-1.

D. Tidewater within the Town of Blue Hill not previously mentioned or described – Class SA.

3. **Brooklin.**

A. Tidewaters of Herrick Bay north of a line drawn due east from a point of land at latitude 44°-16'-18" – Class SB-2.

B. Tidewater from the tidal portion of the Benjamin River and including this river, to latitude 44°-15.5' at Center Harbor – Class SB-1.

C. Tidewaters of Salt Bay – Class SB-1.

D. Tidewater within the Town of Brooklin not otherwise mentioned or described – Class SA.

4. **Brooksville.**

A. Tidewater from Blake Point at longitude 68°-48' to a point of land south of Horseshoe Cove at latitude 44°-19.25' – Class SB-1.

1968, c. 516, § 2.

B. Tidewaters forming the estuary known as Bagaduce River in the Town of Brooksville and east of a point of land at approximately N. 44°-24' by W. 68°-46.3' (just south of Lord's Cove) – Class SA.

1963, c. 516, § 2.

C. Orcutt Harbor north of latitude 44°-20.75' – Class SB-1.

1968, c. 516, § 2.

D. Easterly shoreline of Bucks Harbor from latitude 44°-20'-10" south of longitude 68°-44.5' – Class SB-2.

E. Westerly shoreline of Bucks Harbor south of latitude 44°-20'-10" easterly to longitude 68°-44.5' at Norembega – Class SB-2.

F. Tidewater of Bucks Harbor north of latitude 44°-20'-10" – Class SB-1.

1968, c. 516, § 2.

G. Tidewater along the shoreline at Norembega from longitude 68°-44.5' southeast to longitude 68°-43.25' – Class SB-1.

1968, c. 516, § 2.

H. Tidewater from longitude 68°-42.25' near Herricks Village to Sedgwick-Brookville town line – Class SB-1.

I. Tidewater within this town along its southerly shoreline from Blake Point to the Sedgwick town line not previously mentioned or described – Class SA.

J. Tidal waters from a point of land just south of Lord's Cove at approximately N. 44°-24' by W. 68°-46.3' on the Bagaduce Estuary around Cape Rosier to Blake's Point – Class SB-1.

1965, c. 179, § 3; 1968, c. 516, § 2.

A. Tidewaters in the Town of Castine between a point on Dice Head due south of the lighthouse to the point of land at approximately N. 44°-24', W. 68°-47' Class SB-2.

1963, c. 274, § 3.

B. Tidewaters of the estuary known as Bagaduce River bordering on Castine east of a point of land at approximately N. 44°-24' Class SA.

C. Tidal waters of Castine bordering the Penobscot River Estuary between the Penobscot-Castine boundary and a point of land at approximately N. 44°-27', W. 68°-47' – Class SB-1.

1965, c. 179, § 4.

6. **Deer Isle.**

A. Tidewater bordering the settled area of Eggemoggin between longitude 68°-44' and latitude 44°-18.25' – Class SB-1.

B. Tidewater of Blastrow Cove in Little Deer Isle – Class SB-2.

1969, c. 121, § 1.

C. Tidewaters on the westerly shoreline south of latitude 44°-14.25' to the Deer Isle-Stonington town line, including Northwest Harbor, Pressey Cove and Sheephead Island – Class SB-1.

D. Tidewater from the Stonington-Deer Isle town line at the Holt Pond outlet to the northeasterly point of land at latitude 44°-13.25' at Greenlaw Cove and including Stinson Neck – Class SB-1.

E. Tidewaters of Town of Deer Isle not otherwise mentioned or described – Class SA.

7. **Ellsworth.**

A. All tidal waters within the City of Ellsworth – Class SB-1.

1968, c. 516, § 3.

8. **Franklin.**

A. All tidal waters within the Town of Franklin – Class SB-1.

9. **Gouldsboro.**

A. All tidewaters within the Town of Gouldsboro – Class SB-1.

1968, c. 516, § 4.

10. **Hancock.**

A. Tidewaters of Hancock north and westerly of a line drawn due west from Pecks Point in waters known as Kilkenney Cove, Skillins River and Youngs Bay – Class SB-2.

1967, c. 153, § 1.

B. Tidewaters of the Town of Hancock not otherwise specified or described – Class SB-1.

1967, c. 153, § 1; 1968, c. 516, § 5.

11. **Lamoine.**

A. Tidewaters from the Hancock-Lamoine town line at Kilkenney Cove south to a line drawn due west from Pecks Point in the Town of Hancock – Class SB-2.

1967, c. 153, § 2.

B. Tidewaters wtihin the Town of Lamoine not otherwise specified or classified – Class SB-1.

1967, c. 153, § 2.

12. **Mount Desert.**

A. Tidewater from Otter Cove south of latitude 44°-18.75' to Ingraham Point – Class SA.

B. Tidewaters within the Town of Mt. Desert not otherwise specified or classified – Class SB-1.

1968, c. 516, § 6.

13. Penobscot.

A. Tidewaters of the estuary known as Bagaduce River bordering on Penobscot – Class SA.

B. Tidal waters of Penobscot bordering the Penobscot River estuary – Class SB-1.

1965, c. 179, § 5.

14. Sedgwick.

A. Tidewaters of the estuary known as Bagaduce River bordering on Sedgwick – Class SA.

B. Remaining tidewaters within the Town of Sedgwick not otherwise specified or classified – Class SB-1.

15. Sorrento.

A. All tidewaters within the Town of Sorrento – Class SB-1.

16. Southwest Harbor.

A. All tidewaters within the Town of Southwest Harbor – Class SB-1.

1968, c. 516, § 7.

17. Stonington.

A. Tidewater from the Moose Island Bridge to Ames Pond outlet including waters of Moose Island – Class SB-2.

1969, c. 121, § 2.

B. Tidewaters within the Town of Stonington not otherwise specified or classified – Class SB-1.

1969, c. 121, § 2.

18. Sullivan.

A. All tidal waters within the Town of Sullivan – Class SB-1.

19. Surry.

A. All tidal waters within the Town of Surry – Class SB-1.

20. Swans Island.

A. All tidal waters within the Town of Swans Island – Class SB-1.

1968, c. 516, § 8.

21. Tremont.

A. All tidal waters within the Town of Tremont – Class SB-1.

1968, c. 516, § 8.

22. Trenton.

A. All tidal waters within the Town of Trenton – Class SB-1.

1968, c. 516, § 8.

23. Winter Harbor.

A. All tidal waters within the Town of Winter Harbor – Class SB-1.

1968, c. 516, § 8.

24. Cranberry Isles.

A. All tidal waters within the Town of Cranberry Isles – Class SB-1.

1967, c. 475, § 8; 1968, c. 516, § 9.

25. Long Island Plantation.

A. All tidal waters within Long Island Plantation – Class SB-1.

1968, c. 516, § 9.

A. A municipality, sewer district, person, firm, corporation or other legal entity shall not be deemed subject to penalty under this subchapter at any time prior to October 1, 1976 with respect to any of said classification in Hancock County if by such time he or it, with regard to facilities designed to achieve compliance with the applicable classification shall have completed all the steps required to be then completed by the following schedule:

1) Preliminary plans and engineer's estimates shall be completed and submitted to the Board of Environmental Protection on or before October 1, 1969.

2) Arrangements for administration and financing shall be completed on or before October 1, 1971.

3) Detailed engineering and final plan formulation shall be completed on or before January 1, 1972.

4) Detailed plans and specifications shall be approved by the Board of Environmental Protection and construction begun prior to June 1, 1973.

5) Construction shall be completed and in operation on or before October 1, 1976.

1968, c. 516, § 10; 1972, c. 618.

Knox County

1963, c. 274, § 3

General classification - Tidewaters of Knox County not otherwise specifically designated - Class SA (includes: Cushing, Warren, Thomaston).

1. Camden.

A. Tidewater bordering Camden from Northeast Point to Ogier Point except that assigned to Class "C" - Class SB-1.

B. Tidewater bordering Camden from Metcalf Point to Eaton Point - Class SC.

2. Cushing.

A. Tidewaters bordering Cushing - Class SA.

3. Friendship.

A. Tidewaters of Friendship Harbor north of a line drawn from the point of land opposite the northerly tip of Garrison Island to Jameson Point - Class SC.

4. North Haven.

A. Shoreline of North Haven for ½ mile east of the point of land on the eastern side of Brown's Cove - Class SB-2.

5. Owls Head.

A. Tidewaters from the point of land immediately southwest of Cresent Beach to the Owls Head-Rockland town line - Class SC.

6. Rockland.

A. All tidewaters in the City of Rockland - Class SC.

7. Rockport.

A. Rockport Harbor north of a line extended due east from end of Sea Street, near Harkness Brook - Class SC.

B. Tidewater from Rockland Town Line to the next point of land to the north - Class SC.

C. Clam Cove in Rockport from Brewster Point to Pine Hill - Class SB-2.

D. Rockport Harbor north of a line due west of Beauchamp Point except that portion assigned to Class "C" - Class SB-1.

8. St. George.

A. Tidewaters between a point 100 yards south of the cannery at Port Clyde and the point of land west of Fish Cove - Class SC.

B. Tennants Harbor west of a North-South line at the harbor entrance (approximately longitude 69°-12' W.) - Class SC.

C. Small Cove just northeast of Tenants Harbor, north of a line drawn due west from point of land forming east side of cove – Class SB-1.

D. Tidewaters between Marshall Point and Hooper Point not assigned to Class "C" – Class SB-1.

9. South Thomaston.

A. Northerly cove of Seal Harbor near Sprucehead – Class SB-1.

B. Shoreline St. George River south of Hospital Point – Class SB-1.

C. Weskeag River north of a line due west from Hayden Point – Class SB-1.

10. Thomaston.

A. All tidal waters bordering Thomaston – Class SA.

11. Vinalhaven.

A. Tidewaters of Carvers Harbor and Sand Cove from the point on the south side of Sand Cove to the bridge to Lane Island – Class SB-2.

12. Warren.

A. Tidewaters of Oyster River – Class SB-1.

B. Tidal waters of Warren not otherwise specified – Class SA.

Lincoln County

1963, c. 274, § 3

1. Alna.

A. All tidal waters within the Town of Alna – Class SB-1.

1963, c. 320.

2. Boothbay.

A. All tidewaters within the Town of Boothbay – Class SB-1.

3. Boothbay Harbor.

A. Tidal waters bordering the Town of Boothbay Harbor northerly of a line drawn due east from the point of land off Commercial Street nearest McFarland Island – Class SB-2.

B. Tidal waters not otherwise classified within the Town of Boothbay Harbor – Class SB-1.

4. Bremen.

A. All tidewaters within the Town of Bremen – Class SA.

5. Bristol.

A. All tidewaters not otherwise described or classified within the Town of Bristol – Class SA.

B. Pemaquid Harbor and New Harbor, including back cove in Bristol from Fish Point to a point 100 yards east of Gilbert's Wharf – Class SC.

C. Tidewaters in the Town of Bristol from Fish Point to the point of land east of Johns River, except that segment assigned to Class SC, and Round Pond Harbor inside the closest points on north and south – Class SB-2.

D. Tidewater of Long Cove north of a line drawn due west from the point of land extending southward on the east side of the cove – Class SB-1.

6. Damariscotta.

A. All tidal waters not otherwise described or classified – Class SB-1.

B. Tidewaters from latitude 44°-2.7' (near present Route # 1 Bridge) south to latitude 44°-1.6' (south of Day Cove) – Class SB-2.

1967, c. 304, § 24.

7. Edgecomb.

A. All tidal waters bordering the easterly shoreline of Edgecomb – Class SA.

B. All tidal waters bordering the westerly shoreline of the Town of Edgecomb – Class SB-1.

1963, c. 320.

8. **Newcastle.**

A. Tidal waters not otherwise classified or described within the Town of Newcastle on its easterly shoreline – Class SA.

B. Tidewater from head of tide at Damariscotta Mills in Newcastle south to the Railroad Bridge – Class SB-2.

1967, c. 304, § 25.

C. All tidal waters bordering the westerly shoreline of the Town of Newcastle – Class SB-1.

1963, c. 320.

D. Tidewaters from the Railroad Bridge at Damariscotta Mills south to a point at latitude 44°-2.7' (near present Route # 1 Bridge) – Class SB-1.

1967, c. 304, § 25.

E. Tidewaters from a point at latitude 44°-2.7' (near present Route # 1 Bridge) to a point of land at latitude 44°-1.6' (about ½ mile above Little Point) – Class SB-2.

1967, c. 304, § 25.

F. Tidewaters of the Damariscotta River from a point of land at latitude 44°-1.6' (about ½ mile above Little Point) south of Little Point – Class SB-1.

1967, c. 304, § 25.

9. **Nobleboro.**

A. Head of tide at Damariscotta Mills in Nobleboro to Railroad Bridge – Class SB-2.

1967, c. 304, § 26.

B. Tidewaters in Nobleboro not otherwise classified or described – Class SB-1.

10. **South Bristol.**

A. All tidewaters within the Town of South Bristol not otherwise classified or described – Class SA.

B. Tidewaters south of a line drawn due east from Jones Point except waters around Inner Herron Island and Thrumpcap Island – Class SC.

11. **Southport.**

A. All tidal waters bordering on the Town of Southport – Class SB-1.

1963, c. 320.

12. **Waldoboro.**

A. All tidewaters within the Town of aldoboro not otherwise classified or described – Class SA.

B. Tidewaters north of a line drawn from Hoffses Pt. to Waltz Pt. – Class SB-1.

13. **Westport.**

A. All tidal waters within the Town of Westport – Class SB-1.

1963, c. 320.

14. **Wiscasset.**

A. All tidal waters within the Town of Wiscasset – Class SB-1.

1963, c. 320.

Sagadahoc County

1. General classification.

A. All tidal waters of Sagadahoc County not otherwise classified or described, with the exception of Merrymeeting Bay north and west of the Chops and the Kennebec River, tidal estuary, from the Chops, so called, southerly to a line drawn between the most easterly pont of land at the southerly end of Popham Beach in Phippsburg and the southernmost extension of Bay Point in Georgetown – Class SB-1.

1963, c. 274, § 3.

2. Other category.

A. Tidal waters of the Sasanoa River bordering the Town of Arrowsic, between the Kennebec River and Upper Hell Gate – Class SB-2.

1961, c. 273.

B. Tidal waters bordering the Town of Woolwich between the junction of the so-called Sasanoa River and the Kennebec River and Upper Hell Gate on the Sasanoa River – Class SB-2.

1961, c. 273.

Waldo County

1963, c. 274, § 3

1. **Belfast.**

A. Tidewaters from the Northport-Belfast town line to "The Battery" in Belfast – Class SB-1.

B. Tidewaters between "The Battery" and a point opposite the swimming pool at the city park – Class SB-2.

C. Tidewaters between a point opposite the swimming pool at Belfast city park and the mouth of Goose River, except for portions otherwise classified or described – Class SC.

1967, c. 155.

D. The portion of the tidal estuary of the Passagassawamkeag River upstream at the site of a bridge about one mile upstream of the Route # 1 Bridge at Belfast – Class SB-2.

E. Tidewaters between Goose River and the Searsport-Belfast town line – Class SB-1.

2. **Frankfort.**

3. **Islesboro.**

A. Tidewaters within the Town of Islesboro not otherwise designated or classified – Class SA.

B. Tidewaters from Marshall Pt. to Coombs Pt. – Class SB-1.

C. Dark Harbor inside the tidal dam – Class SB-1.

D. Segment of coast between Grindle Pt. and the point of land to the east of Broad Cove – Class SB-1.

4. **Lincolnville.**

A. Tidewaters within the Town of Lincolnville not otherwise described or classified – Class SA.

B. Tidewater creek or estuary of small stream which rises near Carver's Corner – Class SC.

C. Tidewaters between the Islesboro Ferry wharf, Lincolnville, and a point 1,000 feet north of the tidewater creek at Lincolnville Beach, or estuary of small stream, which rises near Carver's Corner except for the waters of this tidal creek – Class SB-2.

D. Tidewater of the mouth of Ducktrap River from the head of tide to a point approximately 1,000 feet southeasterly of Route 1 – Class SB-1.

5. **Northport.**

A. All tidewaters within the Town of Northport not otherwise described or classified – Class SA.

B. Tidewaters between Saturday Cove and the Northport-Belfast town line – Class SB-1.

6. **Searsport.**

A. All tidewaters within the Town of Searsport not otherwise described or classified – Class SA.

B. Tidewater from Belfast-Searsport town line and the point of land in Searsport Harbor which is formed by the landing or wharf at the end of Steamboat Avenue – Class SB-1.

C. From the wharf at the end of Steamboat Avenue in Searsport to a point opposite the site of the Searsport Railroad Station – Class SB-2.

D. Tidewaters between a point opposite the site of the Searsport Railroad Station and a point 100 yards east of the wharf at Summers Fertilizer Company – Class SB-1.

7. **Stockton Springs.**

A. Tidewater from Ft. Point westerly to the Stockton Springs-Searsport town line – Class SB-1.

B. From a point on the westerly bank of the Penobscot River Estuary at a point where a line drawn in a westerly direction through the southernmost point of Verona Island intersects this bank southerly to Fort Point on Cape Jellison – Class SB-1.

1965 c. 179 § 6.

8. Effective date.

A. The classifications set forth in subsection 7 shall become effective on October 1, 1965, A municipality, sewer district, person, firm, corporation or other legal entity shall not be deemed in violation of these sections at any time or times prior to October 1, 1976 with respect to those classifications if by such time or times he or it with respect to any project necessary to achieve compliance with the applicable classification shall have completed all steps required to then be completed by the following schedule:

(1) Preliminary plans and engineers' estimates involving municipal and other publically owned projects shall be completed on or before October 1, 1968 and plans for required abatement steps by others shall be submitted and approved not later than October 1, 1969.

(2) Arrangements for administration and financing shall be completed on or before October 1, 1971. In the case of municipal projects this period is to include definite scheduling of grants-in-aids.

(3) Detailed plans and specifications shall be approved by the Board of Environmental Protection and construction begun prior to June 1, 1973.

(4) All requirements are to be completed and in operation on or before October 1, 1976.

1965, c. 179, § 8; 1967, c. 475, § 9; 1972, c. 618.

Washington County

1963, c. 274, § 3

1. **Addison.**

A. All tidewaters of Addison not otherwise described or classified – Class SA.

B. Tidewaters between a line extending due east from Whites Pt. to the east side shore and the Columbia Falls-Addison town boundary – Class SB-1.

C. Tidewaters in Addison north of a line across the estuary of Indian River 100 yards below the Route 187 Bridge at Indian River Village – Class SB-2.

2. **Beals.**

A. Tidewaters of Beals not otherwise classified – Class SA.

B. Tidewaters around the northern end of Beals Island between Indian Pt. and the point of land on Beals Island nearest French House Island – Class SB-2.

3. **Calais.**

A. Tidewaters from the Calais-Robbinston town line to a point of land immediately upstream of Devils Head in Calais Class SB-2.

B. Tidewaters of the St. Croix River estuary from the point of land immediately upstream of Devils Head in Calais to the head of tide also in Calais – Class SC.

4. **Cherryfield.**

A. Tidewaters of Narraguagus River estuary – Class SC.

5. **Columbia.**

A. Tidewaters of West Brook estuary above the Columbia-Addison town boundary – Class SB-2.

6. **Columbia Falls.**

A. Tidewater portions of the Pleasant River above the Columbia Falls-Addison town boundary – Class SC.

7. **Cutler.**

A. Tidewaters within the Town of Cutler not otherwise classified – Class SA.

B. Tidewaters of Cutler Harbor inside a line running northeast from the point of land approximately at N. 44°-39.3' and W. 67°-12.4' – Class SB-2.

C. Tidewaters of Money Cove inside the tidal falls – Class SB-1.

8. **Dennysville.**

A. Tidewaters within the Town of Dennysville not otherwise classified – Class SB-1.

B. Tidewaters of Dennys Bay and River west of Hinckley Pt. – Class SC.

9. **East Machias.**

A. All tidewaters within the Town of East Machias – Class SC.

10. **Eastport.**

A. Tidewaters of Eastport not otherwise classified or described – Class SA.

B. Tidewaters of Bar Harbor in Eastport from the fill between northwesterly point of Moose Island and Carlow Island and the old highway bridge from the mainland to Moose Island – Class SB-2.

C. Tidewaters of Carryingplace Cove, east of a line drawn from the point of land at approximately N. 44°-55.3', W. 67°-01.7' to the point of land at approximately N. 44°-55.3', W. 67°-01.7' – Class SB-1.

D. Tidewaters of Prince Cove west of a line extending from Estes Head to the most southerly extension of the point of land on which Country Road, so called, is located – Class SB-2.

E. Tidal waters not otherwise classified between Shackford Head and the point of land near Dog Island in Eastport – Class SC.

11. **Edmunds.**

A. Tidewaters of Edmunds not otherwise classified or described – Class SA.

B. Orange River estuary and Whiting Bay from a line drawn across the bay in a northwesterly and southwesterly direction through Wilbur Pt. and the easterly boundary of Whiting – Class SB-1.

C. Tidewaters of Dennys River in Edmunds west of a line drawn due south from Hinckley Point in Dennysville – Class SC.

D. Tidewater of Dennys River Estuary and Bay east of a line drawn due south from Hinckley Pt. in Dennysville to a point of land at approximately N. 44°-54.5' W. 67°-11.7' – Class SB-1.

12. **Harrington.**

A. All tidewaters of Harrington not otherwise described or classified – Class SA.

B. Tidewaters of Mill River and Cole Creek Estuary northwesterly of Oak Pt. in Harrington – Class SB-1.

C. Tidewaters bordering Harrington west and south of a line across the Harrington River at a point 1,000 feet down-river of the canning factory in Harrington – Class SC.

D. Tidewaters west and north of a line across the Harrington River drawn due east from Oliver Lord Pt., except those west and north of a line across the Harrington River at a point 1,000 feet downriver of the canning factory at Harrington – Class SB-2.

13. **Jonesboro.**

A. All tidewaters in Jonesboro not otherwise described or classified – Class SA.

B. Tidewaters of the Chandler River in Jonesboro upstream of a line drawn normal to the stream at a point 2/10 mile below the Route #1 Bridge at Jonesboro Village – Class SC.

C. Tidewaters along the Chandler River in Jonesboro between a line normal to the stream at a point 2/10 mile below the Route #1 Bridge at Jonesboro Village and a line drawn from Carlton Point to Deep Hole Point – Class SB-1.

14. **Jonesport.**

A. All tidewaters of Jonesport not otherwise described or classified – Class SA.

B. Tidewaters in Jonesport north of a line across the estuary of Indian River 100 yards below the Route 187 Bridge at Indian River Village – Class SB-2.

C. Tidewaters between Hopkins Pt. and Indian Pt. – Class SC.

15. **Lubec.**

A. All tidewaters of Lubec not otherwise described or classified – Class SA.

B. Tidewaters of Bailey's Mistake west of a line drawn due north from Balch Head in the Town of Trescott – Class SB-1.

C. Tidewaters between a point 1,000 yards westerly of Leadurney Pt. and a point 100 yards south of the creek entering tidewater approximately 2/10 mile south of Woodward Pt. – Class SB-1.

D. Tidewaters between Leadurney Pt. and a point 1,000 yards westerly along the shore – Class SB-2.

E. Tidewaters between Leadurney Pt. and a point of land approximately N. 44°-51.2' and W. 67°-00.3' – Class SC.

F. Tidewaters between the site of the North Lubec Ferry landing and a point of land at approximately 44°-51.2' and W. 67°-00.3' – Class SB-1.

16. **Machias.**

A. All tidewaters within the Town of Machias not otherwise specified or classified – Class SC.

B. All tidewaters of Little Kennebec Bay – Class SA.

17. **Machiasport.**

A. All tidewaters not otherwise described or classified – Class SA.

B. Tidewaters of Machias and East Machias Rivers north of a line drawn from Ft. O'Brien Pt. to Randall Pt. in Machiasport – Class SC.

18. **Millbridge.**

A. All tidewaters of Millbridge not otherwise described or classified – Class SA.

B. Tidewaters north and west of a line from Fish Pt. to the point of land approximately N. 44°-31.8' by W. 67°-52.5' – Class SC.

C. Tidewaters of Wyman Cove from Mitchell Pt. to a wharf location approximately 0.4 mile northerly from Mitchell Pt. – Class SB-2.

D. Tidewaters north and west of a line from Timmy Pt. to Fickett Pt., except those defined as Class "SC" – Class SB-1.

E. Tidewaters of the Mill River and Cole Creek estuary southwesterly, westerly and northerly of Blasket Pt. – Class SB-1.

19. **Pembroke.**

A. Tidewaters of Pembroke not otherwise described or classified – Class SA.

B. Tidewater estuaries of Cobscook River and Wilson Stream in Pembroke lying north and west of a line drawn from the point of land at approximately N. 44°-54.5' W. 67°-11.7' in Edmunds, due northeasterly to the Pembroke shore except those portions in Dennysville described as lying west of a line drawn due south from Hinckley Pt. – Class SB-1.

C. Tidewaters of Pennamaquam River and Meadow Brook estuaries in Pembroke north and west of a line drawn due east and west through a point of land at N. 44°-56.5', W. 67°-10' – Class SC.

D. All waters of Hersey Cove and tidewaters of the Pennamaquam River north and west of a line drawn due south from the headland forming the easterly side of the entrance to Hersey Cove to Leighton Neck – Class SB-1.

20. Perry.

A. All tidewaters of Perry not otherwise described or classified – Class SA.

B. Tidewaters of small cove, the first cove westerly of Eastport Branch of Maine Central Railroad, southwest of Pleasant Point school at Pleasant Pt. – Class SB-1.

C. Tidewaters of Little River above the Route # 1 Bridge – Class SB-2.

21. Robbinston.

A. Tidewaters from Liberty Pt. north to Calais-Robbinston town line – Class SB-2.

B. Tidewaters from Liberty Pt. south to Robbinston-Perry town line – Class SB-1.

22. Roque Bluffs.

A. All tidewaters within the Town of Roque Bluffs – Class SA.

23. Steuben.

A. All tidewaters within the Town of Steuben – Class SA.

24. Trescott.

A. All tidewaters not otherwise described or classified within the Town of Trescott – Class SA.

B. Tidewaters of Bailey's Mistake in the Town of Trescott west of a line drawn due north from Balch Head in Trescott – Class SB-1.

C. Tidewaters of Whiting Bay, between a line drawn across the bay northwesterly and southeasterly through Wilbur Pt. and the easterly boundary of Whiting – Class SB-1.

25. Whiting.

A. Tidewaters of Whiting not otherwise described or classified – Class SA.

B. Tidewaters southwesterly of the easterly boundary of Whiting – Class SB-2.

C. Tidewaters of Holmes Bay for a distance of 100 yards around the canning factory – Class SB-2.

York County

1963, c. 274, § 3

1. Biddeford.

A. Tidewaters of Biddeford not otherwise defined or classified – Class SB-2.

B. Estuary of Little River north of latitude 43°-24'-04" to head of tide, including tidal tributaries thereof – Class SC.

C. From the southernmost point of land on the Biddeford mainland to a point where latitude 43°-25'-07" crosses the mainland – Class SA.

D. From a point where 43°-25'-33" crosses the mainland to a point where latitude 43°-26'-05" crosses the mainland – Class SB-1.

E. From a point where latitude 43°-26'-05" crosses the mainland to a point directly north of the Coast Guard Station at Fletchers Neck – Class SA.

F. From the most easterly point of land on the Biddeford mainland to a point directly west of the most northerly point of land on Basket Island, including tidewaters of "The Pool" – Class SB-1.

1967, c. 154, § 1.

G. Tidewaters from a point directly west of the most northerly point of land on Basket Island to head of tide on the Saco River estuary – Class SC.

1967, c. 154, § 1.

2. **Eliot.**

A. Tidewaters within the Town of Eliot – Class SB-1.

3. **Kennebunk.**

A. Tidal waters of Kennebunk not otherwise classified or described – Class SB-2.

B. Estuary of Mousam River from head of tide to Route 9 bridge crossing and tidal tributaries thereof – Class SC.

C. Kennebunk River estuary from head of tide to the Route 9 crossing and tidal tributaries thereof – Class SC.

4. **Kennebunkport.**

A. Tidewaters of Kennebunkport not otherwise classified or described – Class SB-2.

B. Kennebunk River estuary from head of tide to the Route 9 crossing and tidal tributaries thereof – Class SC.

C. Tidewater from a point where longitude 70°-27'-37" crosses the Kennebunkport mainland to a point where longitude 70°-26'-48" crosses the mainland of Kennebunkport – Class SA.

D. Tidewater from a point directly west of the most northerly point of Vaughn Island to a point directly west of the most northerly point of land on Redin Island – Class SC.

E. Estuaries of Smith Brook and Batson River north of latitude 43°-23'-22" and tidal tributaries thereof – Class SC.

F. Tidewater from the mainland of Kennebunkport at latitude 43°-23'-22" north to a point where longitude 70°-24'-33" crosses the mainland – Class SB-1.

G. Tidewater from a point where longitude 70°-24'-33" crosses the mainland north to a point where longitude 70°-24'-05" crosses the mainland – Class SA.

H. Estuary of Little River north of latitude 43°-24'-04" to head of tide, including tidal tributaries thereof – Class SC.

5. **Kittery.**

A. Tidewaters of Kittery not otherwise specified or classified – Class SB-1.

B. Tidewaters from Sister's Point to Kittery-York town boundary, with the exception of Brave Boat Harbor – Class SA.

6. **Old Orchard Beach.**

A. All tidewaters of Old Orchard Beach – Class SB-2.

7. **Saco.**

A. Tidewaters of Saco not otherwise described or classified – Class SB-2.

B. Saco River estuary from head of tide to the Camp Ellis breakwater – Class SC.

1967, c. 154, § 2.

8. **South Berwick.**

A. All tidewaters of South Berwick – Class SB-1.

9. **Wells.**

A. Tidewaters of Wells not otherwise described or classified – Class SB-2.

B. From Wells-York town line to a point of land at longitude 70°-35'-35" and latitude 43°-14'-44" – Class SC.

C. Tidewater from a point where latitude 43°-16'-15" crosses Moody Beach to a point where latitude 43°-19'-04" crosses Wells Beach – Class SA.

D. Estuary of Webhannet River from head of tide to a point at longitude 70°-34'-32", latitude 43°-17'-48" – Class SC.

E. Estuary of Webhannet River from the most easterly bridge crossing at latitude 43°-18'-15" to its ocean confluence at latitude 43°-19'-14" – Class SB-1.

F. Estuary of Merriland River and tidal tributaries thereof from head of tide to its ocean confluence at latitude 43°-20'-10" – Class SC.

10. York.

A. Tidewaters of York not otherwise described or classified – Class SB-2.

B. Tidewaters from Kittery-York town line to point of land known as Argo Pt. – Class SA.

C. Tidal estuary of York River from Route 1 crossing to head of tide, including tidal tributaries thereof – Class SB-2.

1970, c. 538, § 2.

D. Tidewaters from East Pt. to the northernmost point of land at Concordville at longitude 70°-36'-11" – Class SB-1.

E. Estuary of Cape Neddick River from head of tide to point where longitude 70°-36'-46" crosses – Class SB-2.

1970, c. 538, § 2.

F. Tidewaters from Weare Pt. to a point where longitude 70°-36'-46" crosses the mainland of York – Class SB-1.

G. Tidewater from a point where longitude 70°-35' crosses the mainland of York to York-Wells town line – Class SA.

R.S. 1954, c. 79, § 15; 1957, c. 322, § 9; 1959, c. 183, § 3; 1961, cc. 273, 284; 1963, c. 54, § 2; c. 157; c. [illegible], § 3; cc. 316, 320.

§ 371. Repealed.

1955, c. 426, § 8; 1957, c. 322, §§ 2, 10; 1963, c. 420, § 3; 1967, c. 342, § 1; 1971, c. 335; 1973, c. 29; 1977, c. 373, § 30.

§ 371-A. Classification of great ponds

1. **Great ponds classified.** All great ponds within the State of Maine shall be classified as not less than Class GP-A, except as otherwise provided in this section. The board, upon application by any interested person, may hold a hearing in accordance with the classification procedure and if it shall find it is for the best interests of the public that such waters or any part thereof would be otherwise classifed, it shall do so in accordance with the classification procedure of this subchapter.

2. **Existing discharges.** Existing licensed discharges to Class GP-A great ponds will be allowed to continue until practical alternatives exist, but no new discharges will be permitted to Class GP-A great ponds after the effective date of this section.

3. **Exemption.** Aquatic chemical applications approved by the Board of Pesticides Control shall be exempt from the "no discharge" provision.

4. **Class GP-B.** The following great ponds shall be classified Class GP-B:

A. Annabessacook Lake, Monmouth and Winthrop Townships, Kennebec County;

B. Brewer Lake, Orrington and Holden Townships, Penobscot County;

C. Cobbosseecontee Lake, Winthrop, Monmouth, West Gardiner and Litchfield Townships, Kennebec County;

D. Douglas Pond, Pittsfield Township, Somerset County;

E. Estes Lake, Sanford and Alfred Townships, Frankling County;

F. Haley Pond, Rangeley and Dallas Townships, Franklin County;

G. Little Cobbosseecontee Lake, Winthrop Township, Kennebec County;

H. Lovejoy Pond, Albion Township, Kennebec County;
I. Nubble Pond, Raymond Township, Cumberland County;
J. Pattee Pond, Winslow Township, Kennebec County;
K. Pleasant Pond, Litchfield and Gardiner Townships, Kennebec County;
L. Pushaw Pond, Glenburn, Old Town, Orono and Hudson Townships, Penobscot County;
M. Sabattus Pond, Sabattus, Green and Wales Townships, Androscoggin County;
N. Salmon Lake, Belgrade and Oakland Townships, Kennebec County;
O. Sebasticook Lake, Newport Township, Penobscot County;
P. Spaulding Pond, Lebanon Township, York County; and
Q. Webber Pond, Vassalboro Township, Kennebec County.

1977, c. 373, § 31.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER QUALITY CONTROL
REGULATIONS

These regulations are current as of the date printed on the cover of this booklet. There may have been changes after this booklet was printed. The reader is urged to contact the Bureau of Water Quality Control 207-289-2591 or the Citizens' Environmental Assistance Service 1-800-452-1942 if there are any questions.

581-1 – 581.7 WATER QUALITY EVALUATIONS
EFFECTIVE DATE NOVEMBER 29, 1973; AMENDED DATE MARCH 14, 1977

581.1 Assimilative Capacity – Rivers and Streams

For the purpose of computing whether a discharge will violate the classification of any river or stream, the assimilative capacity of such river or stream shall be computed using the minimum seven day low flow which occurs once in ten years. Waste discharges shall be appropriately reduced when flows fall below the seven day ten year low flow if the board determines that such reduction is necessary to maintain such applicable classification.

581.2 Minimum Flow – Regulated Rivers and Streams

For regulated rivers and streams, the Department may establish a minimum flow necessary to maintain water quality standards. This flow will be based upon achieving the assigned classification, criteria and protection of the uses of the stream. The Department will cooperate with appropriate Federal, State and private interests in the development and maintenance of stream flow requirements.

581.3 Assimilative Capacity – Great Ponds

The hydraulic residence time will be used to compute the assimilative capacity of great ponds. Hydraulic residence time will be computed by dividing lake volume by the product of watershed area and the precipitation runoff coefficient.

581.4 Reserved

581.5 Zone of Passage

All discharges of pollutants shall, at a minimum, provide for a zone of passage for free-swimming and drifting organisms. Such zone of passage shall not be less than ¾ of the cross-sectional area at any point in the receiving body of water. Such zone of passage may be reduced whenever the applicant for a discharge can demonstrate that (a) because of physical phenomena in the receiving body of water such minimum zone cannot be maintained and (b) such minimum zone of passage is not necessary to protect organisms in the receiving body of water from substantial adverse effects.

581.6 Great Ponds Trophic State Index (TSI)

For the purposes of determining trophic state of great ponds the following trophic state index will be used.

Zero on this scale indicates poor water quality and 100 indicates excellent water quality. The TSI is defined as 40 + 33 ($\log_{10}$ minimum Secchi disk transparency in meters). Average chlorophyll *a* and spring total phosphorus may also be related to TSI.

581.7 Stream Species Diversity Index

The generic diversity of the bottom fauna of waters classified B-1 and B-2 shall not be less than 2.2 as measured by the Shannon-Weiner diversity index.

582.1 – 582.8 TEMPERATURE

EFFECTIVE DATE NOVEMBER 29, 1973

582.1 Freshwater Thermal Discharges

No discharge of pollutants shall cause the ambient temperature of any freshwater body, as measured outside a mixing zone, to be raised more than 5°F or more than 3°F in the epilimnion of any lake or pond. In no event shall any discharge cause the temperature of any freshwater body to exceed 84°F at any point outside a mixing zone established by the board, nor shall such discharge cause the temperature of any waters which presently are designed as trout or salmon waters to exceed 68°F at any point outside a mixing zone established by the board

582.2-4 Reserved

582.5 Tidal Water Thermal Discharges

No discharge of pollutants shall cause the monthly mean of the daily maximum ambient temperatures in any tidal body of water, as measured outside the mixing zone, to be raised more than 4°F nor more than 1.5°F from June 1 to September 1. In no event shall any discharge cause the temperature of any tidal waters to exceed 85°F at any point outside a mixing zone established by the board.

582.6-8 Reserved

583.1 – 583.3 NUTRIENT CONCENTRATION

EFFECTIVE DATE NOVEMBER 29, 1973; AMENDED DATE MARCH 14, 1977

583.1 Phosphorus

There shall be no additional discharge of phosphorus to any lake or pond or tributary thereto which discharge does not employ the best available technology for phosphorus removal.

583.2

Existing discharges of phosphorus to any lake, pond or tributary thereto shall, on or before October 1, 1976, be treated to remove phosphorus to the maximum extent technically feasible.

583.3 Phosphorus Concentrations in Tributaries to Great Ponds

Notwithstanding Sections 583.1 and 583.2, the ambient concentration for total phosphorus in all tributaries to Great Ponds shall not exceed 50 micrograms per liter (50 ug/l).

584 – 584.1 WATER QUALITY CRITERIA
EFFECTIVE DATE MARCH 14, 1977

584 Water Quality Criteria

The criteria listed below will apply only to Seciton 363, standards of classification of fresh waters, class B-1 and B-2. The numbers represent maximum acceptable concentration limits in the receiving waters. All numbers are expressed in micrograms per liter (ug/l).

584.1 Metals

	Metal	*Concentration*
A.	Chromium	50 ug/l

590.1 – VARIANCES FROM VARIOUS REGULATIONS
EFFECTIVE DATE NOVEMBER 29, 1973; AMENDED DATE MARCH 14, 1977

590.1 Variances

The board may, in any license or Order issued by it, impose on any discharge limitations more stringent than those required by Regulations 580, 581, 582, 583 and 584 whenever the physical or chemical properties or biological phenomena in the receiving body of water so require in order to maintain the statutory classification. The board may authorize a variance from any of the limits established hereby whenever the applicant demonstrates that (a) because of physical or natural conditions in the receiving body of water such limits cannot be attained and (b) maintenance of such limits are not necessary to protect organisms in the receiving water from substantial adverse effects and (c) the proposed discharge will assure the protection and propagation of a balanced and indigenous population of fish, shellfish and wildlife in and on the receiving body of water.

591.1 – EXCEPTIONS FOR VARIOUS REGULATIONS
EFFECTIVE DATE NOVEMBER 29, 1973; AMENDED DATE MARCH 14, 1977

591.1

No provision of Regulations 580, 581, 582, 583, 584 and 590 shall be deemed to change, alter, affect or supersede the terms or conditions of any Order or license heretofore issued by the Board of Environmental Protection.

This Booklet is intended for
General Information.
It is not intended for
Legal Reference.

Account and Activity No. 1530 4010

3-B-59

APPENDIX C: THE CLEAN AIR ACT AND MAINE

THE CLEAN AIR ACT - BACKGROUND

Introduction

The Clean Air Act of 1970 was an ambitious piece of legislation which was designed as a get-tough measure to solve the massive air pollution problems of the United States once and for all. The Act essentially replaced all Federal efforts to control the emission of pollutants into the atmosphere. The Clean Air Act (CAA) authorized the Environmental Protection Agency (EPA) to set standards and regulations for maintaining and improving the quality of the atmosphere. The CAA mandated to EPA to promulgate the following major actions:

> Establish ambient air quality standards to protect the nation's health and welfare for hydrocarbons (HC), sulfur dioxide (SO_2), total suspended particulates (TSP), nitrous oxides (NO_x), carbon monoxide (CO), and photochemical oxidants (oxone).
>
> Divide the country into approximately 250 Air Quality Control Regions (AQCR).
>
> Require each of the states to develop State Implementation Plans (SIP) to maintain or improve air quality.
>
> Determine the compliance status for each AQCR for each of the ambient air quality standards.
>
> Set achievable emission limitations for a number of point sources.
>
> Establish New Source Performance Standards (NSPS).
>
> Establish timetables for compliance and enforcement mechanisms.

(Environmental Reporter, Federal Law Section 71; 110).

Each of these seven major actions will be briefly described.

The Clean Air Act of 1970

The major thrust of the Clean Air Act calls for the Administrator of the EPA to propose regulations defining National Primary Ambient Air Quality Standards, NAAQS, (table 2-1) which would adequately protect the health of the public and the environment for the six most common debilitating air pollutants; hydrocarbons, sulfer dioxide, total suspended particulates, nitrous oxides, carbon monoxide and photochemical oxidants. These six air contaminants are the major sources of health hazards as cancer, emphysema, bronchitis, heart and lung disorders and of ecosystem deterioration through acid rain and heavy metal contamination, for example (see Human Health Effects and Affects of Air Quality on Ecosystems).

Table 2-1. National Air Quality Standards

Pollutant	Averaging Time	Primary[b] Standards	Secondary[c] Standards	Reference[d] Methods
Sulfur Dioxide	Annual Arithmetic Mean	80 ug/m^3 (0.03ppm)		
	24 hours	365 ug/m^3 (0.14ppm)		Pararosaniline Method
	3 hours	---	1300 ug/m^3 (0.5 ppm)	
Particulate Matter	Annual Geometric Mean	75 ug/m^3	60 ug/m^3[e]	High Volume Sampling Method
	24 hours	260 ug/m^3	150 ug/m^3	
Carbon Monoxide	8 hours	10mg/m^3 (9ppm)	Same as Primary Standards	Non-Dispersive Infrared Spectroscopy
	1 hour	40mg/m^3 (35ppm)		
Ozone (corrected for NO_2 & SO_2)	1 hour	235 ug/m (0.120 ppm)	Same as Primary Standard	Gas Phase Chemiluminescent Method
Hydrocarbons (corrected for Methane)	3 hours	160 ug/m^3[e] (0.24ppm)	Same as Primary Standard[e]	Flame Ionization Detection Using Gas Chromatography
Nitrogen Dioxide	Annual Arithmetic Mean	100 ug/m^3 (0.05 ppm)	Same as Primary Standard	Gas Phase Chemiluminesence

a. National standards other than those based on annual arithmetic means or annual geometric means are not to be exceeded more than once per year.

b. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

c. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

d. Reference method as described by the EPA. An "equivalent method" means any method of sampling and analysis which can be demonstrated to the EPA to have a "consistent relationship to the reference method".

e. Guideline to be used assessing implementation plans.

The major responsibilities for assuring that the National Ambient Air Quality Standards are attained and maintained is left up to the individual states. These responsibilities are to be formulated and outlined in a plan known as the State Implementation Plan (SIP) which is subject to the approval of the EPA. Recently the Maine Department of Environmental Protection issued a State Implementation Plan for Air Quality which details a comprehensive strategy for achieving and maintaining clean air for the State of Maine (see Attainment and Maintenance of Air Quality in Maine)

The CAA created some 250 Air Quality Control (AQCR) such that local interests could be maintained when dealing with air pollution control strategy. The State of Maine is divided into five AQCR. Only three of these regions are directly associated with the Coast of Maine Characterization Area; the Metropolitan Portland, Androscoggin Valley (also referred to as Central Maine), and Down East Air Quality Control Regions.

The States are required to determine the compliance status for each AQCR for each of the six ambient air quality standards. Using what air quality data exists and by analyzing dispersion patterns and point sources, the states have evaluated their own air quality and designated the regions as:

> Nonattainment: does not meet the national primary or secondary ambient air quality standard for any pollutant.
>
> Attainment: has ambient air quality levels better than the national primary or secondary ambient air quality standards.
>
> Unclassifiable: can not be classified as either attainment or nonattainment on the basis of existing information.

For nonattainment areas, detailed control strategies geared at improving air quality to the minimum acceptable levels as defined by the NAAQS are contained within the State Implementation Plans. Attainment areas are to be monitored closely to assure the quality of the air remains healthy. Finally, unclassified areas are to receive highest priority ambient air monitoring to determine their appropriate designation.

Section 111 of the Act provides for establishing New Source Performance Standards (NSPS). The NSPS were to be stringent in order to avoid significant air pollution problems from industrial expansion. The Clean Air Act requires that a new source must be in compliance with the standard in order to operate. At present, NSPS in the form of emissions limitations have been set for 19 industrial categories and five pollutants. The EPA, under Section 112 of the Act has also set standards for asbestos, beryllium, mercury, and vinyl chloride. These apply to all existing sources of pollutants and to all new sources. The purpose of New Source Performance Standards (NSPS) is to maintain existing air quality and to prevent new air pollution problems from developing in the future. EPA will set NSPS for 200 source categories.

The EPA set 1975 as a deadline for the attainment of the primary standards. However, massive resistance to the timetable and strict standards promulgated by EPA chiefly by large industrial pollutors caused delays and unacceptable SIP's. It was clear that the problems encountered in attempting to administer the Act and the significant problem of dealing with nonattainment required more stringent SIP's and more active enforcement activities than originally anticipated. The CAA of 1970 was amended in 1977.

The 1977 Amendments to the Clean Air Act

The Amendments of 1977 to the Clean Air Act have been described as a compromise neither stronger nor weaker than the intentions of the original act. Although deadlines have been relaxed and some requirements deleted, more standards were imposed and new enforcement policies have been added.

The mechanism for the implementation of the Clean Air Act still focuses on the State Implementation Plans, however, revisions in the SIP's were required. The revised SIP's must include requirements for the use of all Reasonably Available Control Technologies (RACT) for sources in nonattainment areas, must include an inventory of actual emissions from all sources and must require new construction permits for all new sources (National Air Coalition 1977). In nonattainment areas states must have an approved implementation plan revision by 1 July, 1979, which provides for meeting primary air quality standards by 31 December, 1982.

In attainment areas (areas which meet the NAAQS), the Amendments of 1977 call for the Prevention of Significant Deterioration of the ambient air quality.These areas are classified as Class I, Class II, or Class III, depending on the current quality of the air and the degree of deterioration to be allowed. For these nondegradation areas, maximum allowable increases (increments) in ambient concentrations of pollutants have been set. Class I areas include all international parks, national wilderness areas, and national memorial parks greater than 2429 ha (6000 acres) and are most highly protected. Other nondegradation areas are classified Class II and Class III. New sources requesting to site or potentially affect a nondegradation area must comply with PSD requirements. These new sources may be required to employ Best Available Control Technology (BACT).

Overview

The Clean Air Act of 1970 was an ambitious piece of legislation which focused together all previous attempts to clean the Nation's air into one package. The EPA was authorized to set regulations and standards for improving and maintaining air quality in the United States. This included establishing National Ambient Air Quality Standards, dividing the country into Air Quality Control Regions, determining the status of air quality in those regions, developing State Implementation Plans to maintain and improve air quality, and setting New Source Performance Standards. The bulk of the problem of devising methodologies for improving and maintaining air quality was left to the individual states. Maine responded by proposing a State Implementation Plan for Air Quality in May, 1979, which detailed the strategy for protecting the citizens and ecosystems of Maine from deteriorating air quality.

ATTAINMENT AND MAINTENANCE OF AIR QUALITY IN MAINE

Introduction

The 1977 Clean Air Act relies heavily on each state and specifically the State Implementation Plan for outlining how each state will meet the Clean Air Act standards. The states maintain a flexibility in approach in achieving and maintaining the National Ambient Air Quality Standards. For instance, the Clean Air Act encouraged each state to develop emission limitations in order to attain and maintain the NAAQS within their state. States may set their own standards as long as they are more stringent than the Federal standards. The Maine SIP establishes ambient air quality standards that represent the maximum levels of controlled pollutants that are permitted in the ambient air in Maine. Compare the State standards of table 2-2 with the Federal standards in table 2-1. By setting stricter standards, Maine is investing in cleaner air for its citizens.

The Clean Air Act mandated that each State Implementation Plan (SIP):

> Identify alternative control strategies for attainment and maintenance of the National Ambient Air Quality Standards (NAAQS).
>
> Attain the primary standard for each of the six criteria air pollutants (CO, SO_x, NO_x, hydrocarbons, photochemical oxidents, and particulates) as expeditiously as possible.
>
> Insure that pollutant emissions will not interfere with attainment and maintenance of a national standard.

The approval of an SIP is based on the EPA Administrator's determination that the plan adequately meets the requirements of the Act. It is important that the SIP include control strategies which deal directly with the particular problems and needs of the state. An entire plan may be approved, or the EPA Administrator may only approve a portion of the plan.

The Maine State Implementation Plan

The State of Maine addressed the attainment and maintenance of air pollution in the State Implementation Plan for Air Quality, adopted by the Board of Environmental Protection in May of 1979. In this document, control strategies for each of the five Ambient Air Quality Control Regions of the State are presented. Areas are designated as either attainment, nonattainment, or unclassifiable (due to lack of data). For those areas which are nonattainment, control strategies are proposed addressing, in order: The problem; proposed solution; justification of the solution; reasonable further progress (toward attainment of the NAAQS by 31 December, 1982); and, potential growth of the pollutant in the future.

Secondly, a mechanism for the review of performance standards for new sources and modifications of old point sources by licensing is proposed. Air emission licenses are required for almost all stationary sources of air pollution. Major emitting sources are subject to different requirements, depending on their locations with the state.

Table 2-2 Ambient Air Quality Standards - State of Maine

Pollutant	Averaging Time	Standards
Sulfer Dioxide	Annual Arithmetic Mean	57 uglm$_3$
	24 hours	230 uglm$_3$
	3 hours	1150 uglm$_3$
Particulate Matter	Annual Geometric Mean	60 uglm$_3$
	24 hours	150 uglm$_3$
Carbon Monoxide	8 hours	10 mglm$_3$
	1 hour	40 mglm$_3$
Photo-Chemical Oxidants	1 hour	160 uglm$_3$
Hydrocarbons	3 hours	160 uglm$_3$
Nitrogen Dioxide	24 hours	100 uglm$_3$

Source (DEP 1979)

These standards are applicable in all ambient air quality control regions of the State of Maine. All ambient air quality standards are expressed at 25 degrees centigrade and 760 millimeters of mercury pressure.

Licensing of New Sources and Modifications

The SIP requires all new sources of air pollution and modifications (with a few exceptions) be licensed. Two approaches to the licensing have been taken.

Sources which locate within attainment areas are subject to the Prevention of Significant Deterioration Program (PSD) which requires the source to undergo preconstruction review and the imposition of Best Available Control Technology (BACT). Sources which propose to locate in nonattainment areas must meet more stringent requirements to insure reasonable further progress in attaining the ambient air quality standard which is being violated. This includes BACT for those pollutants not the cause of nonattainment and Lowest Achievable Emission Rate (LAER) for those pollutants which are the cause of nonattainment. Sources must also comply with the Growth Offset Regulation. The requirements for licensing in attainment and nonattainment areas will be briefly described.

Programs for Attainment Areas

Under the Prevention of Significant Deterioration Program, attainment areas within the State are designated as either Class I, Class II, or Class III. The class designations indicate, in addition to the ambient air quality standards adopted by the Board of Environmental Protection a maximum level of allowable increase (increment) in the concentrations of sulfer dioxide and particulate matter over the baseline concentrations. The increases can only be exceeded once annually. Table 2-3 indicates those increments allowable for each Class. Obviously, Class I areas are highly protected followed by Class II and III.

Maine is regulated as a Class II clean air area under the Prevention of Significant Deterioration Program except for those nonattainment areas and the following exceptions:

(1) Those areas of the State that are redesignated by the Board following the procedures required by the Federal Clean Air Act.

(2) Federally designated Class I areas: Acadia National Park (located in the Downeast Air Quality Region); Moosehorn National Wildlife Refuge designated as a Wilderness Area (located in the Downeast Air Quality Region); and Roosevelt Campobello International Island (located in New Brunswick, Canada, off the coast of the Downeast Air Quality Region).

New sources and modifications to existing sources which are major emitting sources must undergo preconstruction review. This will insure compliance with both the ambient standards and the applicable increment, depending on the location (i.e., Class) of the source. Compliance is also required with the Best Available Control Technology. BACT is an emission limitation based on the maximum degree of reduction of each pollutant emitted which results from a new source or modification. BACT is determined on a case by case basis taking into account factors as energy, environmental and economic impact, costs, etc.

Table 2-3 Established Annual Increments of Sulfer Dioxide and Particulate Matter for Class I, II and III Attainment Areas in the State of Maine.

	Particulate Matter		Sulfer Dioxide		
Attainment Area	Annual Geometric Mean	24 hr.	Annual Arithmetic Mean	24 hr.	3 hr.
Class I	5 ug/m$_3$	10 ug/m$_3$	2 ug/m$_3$	5 ug/m$_3$	25 ug/m$_3$
Class II	19 ug/m$_3$	37 ug/m$_3$	20 ug/m$_3$	91 ug/m$_3$	512 ug/m$_3$
Class III	37 ug/m$_3$	75 ug/m$_3$	40 ug/m$_3$	182 ug/m$_3$	100 ug/m$_3$

Source (DEP 1979)

Programs for Nonattainment Areas

New sources or modifications which locate in nonattainment areas are subject to the Growth Offset REgulation, Best Available Control Technology, and Lowest Achievable Emission Rates. BACT is required for sources for those pollutants which are not the cause of the nonattainment designation. In addition LAER is required for those pollutants for which the source has a potential to emit 100 tons per year or more of any regulated pollutant for which an area is designated nonattainment (Department of Environmental Protection 1979).

The combination of proposed emissions must comply with the Growth Offset Regulation. This regulation insures that ambient air quality standards will be maintained and details how additional emissions will be permitted in areas where standards are now in violation or in which the increment has been exceeded. The regulation requires that ...

> Any air contaminant source . . .must . . .obtain an air quality impact reduction (offset) from existing sources whose emissions of the same pollutant effects the same area as the proposed source. Sufficient offset must be obtained to insure the applicable ambient air quality standard an/or the applicable PSD increment is maintained, except in those instances where no SIP has been developed to demonstrate compliance. In such cases the proposed source must demonstrate progress toward attaining the standard by providing for reductions in impacts from existing sources in excess of the new source impacts (Department of Environmental Protection:158).

The Growth Offset Regulation will in effect control additional air pollution in areas which are nonattainment so that the ambient air quality standards are maintained. In areas of violation, the Growth Offset Regulation will insure progress toward attaining the standards.

In general, the Growth Offset Regulation applies to the following areas in coastal Maine (Department of Environmetal Protection 1979):

(1) All new major emitting sources of particulate matter proposed for the municiaplities of Bangor, Brewer, Augusta, and Thomaston.

(2) All new sources emitting 1000 tons per year of carbon monoxide in Bangor.

(3) An air contaminant source emitting more than 100 tons per year of any pollutant for which there is an ambient air quality standard and which emissions take place in an area where the PSD increment has been consumed.

(4) All major emitting sources emitting more than 100 tons per year of compounds in the Metropolitan Portland Region and Central Maine (Androscoggin) Air Quality Control Region.

Overview

The Clean Air Act of 1977 requires that each state formulate a State Implementation Plan which proposes how each state will attain and maintain clean air within the guidelines of the Clean Air Act. Maine proposed its State Implementation Plan to the Environmental Protection Agency in May, 1979. The Maine SIP designates attainment, nonattainment and unclassified areas within the State for six criteria pollutants; it proposes control strategies for areas which are nonattainment; it details a licensing strategy for new sources and modifications in both attainment and nonattainment areas. The program for attainment areas provides for the Prevention of Significant Deterioration within those areas through the imposition of Best Available Control TEchnologies. For nonattainment areas, the program requires new sources or modifications of sources to comply with the Growth Offset Policy which includes the use of Best Available Control Technologies and Lowest Achievable Emission Rates.

UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

APPENDIX D

Selected List of Federal Laws and Treaties Relating to Sport Fish and Wildlife

Revised December 1976
Office of Legislative Services

The Acts and Treaties listed here with descriptions of their provisions and relevant additional information are the authorities for many programs of the Department of the Interior acting through its U.S. Fish and Wildlife Service. The purpose of this leaflet is to provide a ready reference to the authorities most commonly associated with conservation of fish, wildlife and plants, most of which provide direction for the work of the U.S. Fish and Wildlife Service. However, it is not a complete listing of all conservation related Acts or of all Acts governing the work of the Service. In addition, this leaflet does not include all the Federal laws directing consultation or coordination with or by the U.S. Fish and Wildlife Service, nor does it include all of the laws influencing or directing general Federal administrative practices. The laws and treaties with important amendments noted are arranged alphabetically by popular name, except that some statutes have been grouped together in the alphabetical listing under the following headings: Fish and Wildlife Conservation at Federal Reclamation Projects; Fish and Wildlife Conservation at Federal Water Resource Development Projects of the Corps of Engineers; National Fish Hatchery Acts; National Wildlife Refuge Acts; National Wild and Scenic Rivers System Acts; National Wilderness Preservation System Acts. Abbreviations used in the citations following the name of the Act or Treaty refer to the following documents: I.L.M.: International Legal Materials, issued by the U.S. Department of State; Stat.: United States Statutes at Large published by the U.S. Government Printing Office, various volumes; TS: Treaty Series, issued by the U.S. Department of State as single pamphlets (until replaced by T.I.A.S. in 1945); T.I.A.S.: Treaties and Other International Acts Series, issued by the U.S. Department of State as single pamphlets; U.S.C.: United States Code, published by the U.S. Government Printing Office, 1970 edition and supplements; U.S.T.: United States Treaties and Other International Agreements, published by the U.S. Government Printing Office, various volumes published on a calendar year basis as of January 1, 1950.

Administrative Procedures Act (5 U.S.C. 551-559, 701-706, 1305, 3105, 3344, 4301, 5362, 7521; 60 Stat. 237), as amended.—Public Law 79-404, as amended, outlines the several forms of administrative proceedings (hearings, adjudication, etc.) and prescribes procedural and substantive limitations thereon. The Act also provides for judicial review of Federal agency decisionmaking actions.

Accelerated Wetland Acquisition Loan Act—See Wetlands Loan Act

Agreement Between the United States and Denmark Relating to Conservation of Atlantic Salmon (23 U.S.T. 1278; T.I.A.S. 7402).—This Agreement effected by exchange of notes signed in Washington, D.C., July 6, 1972, and entered into force on that same date has as its purpose the regulation of the Atlantic salmon catch in 1972 and subsequent years.

Agreement on Cooperation in the Field of Environmental Protection (23 U.S.T. 845; T.I.A.S. 7345).—This May 23, 1972, agreement between the United States and the USSR has as an objective cooperation in the field of environmental protection through exchange of scientific personnel, organization of bilateral conferences, exchange of scientific and technical information, and development and implementation of projects. The agreement emphasizes activities related to air and water pollution, enhancement of urban environment, preservation of nature, establishment of preserves, and arctic and subarctic ecological systems.

Agreement on the Conservation of Polar Bears (I.L.M. 13:13-18, Jan. 1974).—This 1973 agreement between the governments of Canada, Denmark, Norway, USSR and the United States recognizes the responsibilities of the circumpolar countries for coordination of actions to protect polar bears. Except under certain specified conditions, taking of polar bears is prohibited. The agreement was signed by the United States on November 15, 1973, and ratified September 30, 1976. Agreement entered into force November 1, 1976, with ratification by three countries. Public Law 92-522, the Marine Mammal Protection Act of 1972 (16 U.S.C. 1361 *et seq.*; 86 Stat. 1027) provides authority for the United States to implement the agreement.

Airborne Hunting Act—See Fish and Wildlife Act of 1956

Airport and Airway Development Act (49 U.S.C. 1701-1742; 84 Stat. 219), as amended.—Among other things requires consultation with the Secretary of the Interior to obtain recommendations regarding preservation of environmental quality in approving airport construction.

Alaska Native Claims Settlement Act (43 U.S.C. 1601-1624; 85 Stat. 688), as amended.—Under Public Law 92-203, approved December 18, 1971, Alaska Natives can choose and receive title to 42 million acres, or about one-ninth of the State as part of their original claim to the land. The Act also requires the Secretary of the Interior to withdraw up to 80 million acres of existing public land for specific consideration as new national wildlife refuges, national parks, national forests and wild and scenic rivers. These lands remain in a special withdrawal category until Congress acts on the proposals or until December 1978. As a result of this Act the Secretary has recommended among other things the addition of some 31.59 million acres to the National Wildlife Refuge System.

Anadromous Fish Conservation Act (16 U.S.C. 757a-757f; 79 Stat. 1125), as amended.—Public Law 89-304, approved October 30, 1965, authorizes the Secretary of the Interior and Commerce to enter into cooperative agreements with the States and other non-Federal interests for conservation, development and enhancement of the Nation's anadromous fish (such as salmon, shad, steelhead trout and striped bass), including anadromous fish in the Great Lakes. Investigations, engineering and biological surveys, research, stream clearance, construction, maintenance and operations of hatcheries and devices and structures for improving movement, feeding and spawning conditions are authorized. Amended by Public Law 91-249, May 14, 1970 (84 Stat. 214) and by Public Law 93-362, July 30, 1974 (88 Stat. 398) to extend and increase the authorization of appropriations through June 30, 1979, and to make various technical and clarifying changes in the law for sea lamprey control programs.

Animal Damage Control Act of March 2, 1931 (7 U.S.C. 426-426b; 47 Stat. 1468).—Provides broad authority for investigations, demonstrations and control of mammalian predators, rodents and birds. Gives authority to enter into cooperative agreements with other agencies to conduct such activities. Control functions transferred from the Department of Agriculture to the Department of the Interior in 1939 by Reorganization Plan No. II. Executive Order 11643 of February 8, 1972, Executive Order 11870 of July 18, 1975, and Executive Order 11917 of May 28, 1976, prescribe the use of certain toxicants in Federal predator control programs and on Federal lands.

Animal Welfare Act (7 U.S.C. 2131-2155; 80 Stat. 350, 84 Stat. 1560), as amended.—Also referred to as the Federal Laboratory Animal Welfare Act, Public Law 91-579, approved December 24, 1970, as amended by Public Law 94-279, approved April 22, 1976 (90 Stat. 417), directs the Secretary of Agriculture to regulate and insure the humane care and treatment of dogs, cats and certain other animals used for research, experimentation, exhibition and sale purposes, as well as to assure humane treatment of animals during transportation in commerce and to protect owners of animals from theft by preventing the sale or use of animals which have been stolen. Directs consultation and cooperation with other Federal agencies concerned with the welfare of animals in the establishment of standards and in carrying out other purposes of the Act.

Antiquities Act (16 U.S.C. 431, 432, 433; 34 Stat. 225).—The Act of June 8, 1906, among other things requires that a permit be obtained for examination of ruins, excavation of archaeological sites and the gathering of objects of antiquity on lands under the jurisdiction of the Secretaries of Interior, Agriculture and Army.

Archeological and Historic Preservation Act (16 U.S.C. 469-469c; 74 Stat. 220), as amended.—This Act directs Federal agencies to notify the Secretary of the Interior whenever they find a Federal or Federally assisted, licensed or permitted project may cause loss or destruction of significant scientific, prehistoric, historic or archeologic data. Funds may be appropriated, donated and/or transferred for the recovery, protection and preservation of such data.

Atlantic Salmon Conservation Agreement between the United States and Denmark—See Agreement between the United States and Denmark Relating to Conservation of Atlantic Salmon

Bald Eagle Act of 1940 (16 U.S.C. 668-668d; 54 Stat. 250), as amended.—This June 8, 1940, Act as amended June 25, 1959, by Public Law 86-70 (73 Stat. 143), October 24, 1962, by Public Law 87-884 (76 Stat. 1246) and October 23, 1972, by Public Law 92-535 (86 Stat. 1064) provides for protection of the bald eagle (the national emblem) and the golden eagle by prohibiting except under certain specified conditions the taking, possession and commerce in such birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto and strengthened other enforcement measures.

Bankhead-Jones Farm Tenant Act (7 U.S.C. 1000, 1006, 1010-1012; 50 Stat. 522), as amended.—Section 31 of the Act of July 22, 1937 (7 U.S.C. 1010; 50 Stat. 525), as amended, directs the Secretary of Agriculture to develop a program of land conservation and utilization in order to correct maladjustments in land use and thus assist in such things as control of soil erosion, reforestation, preservation of natural resources and protection of fish and wildlife. Some early refuges and hatcheries were established under authority of this Act.

Black Bass Act (16 U.S.C. 851-856; 44 Stat. 576), as amended.—This May 20, 1926, Act as amended July 2, 1930 (46 Stat. 845), July 30, 1947 (61 Stat. 517), July 16, 1952 (66 Stat. 736), and December 5, 1969, Public Law 91-135 (83 Stat. 282) prohibits importation or transportation in interstate or foreign commerce of black bass and other fish in violation of foreign, State, or other law, or purchase of such fish. Authorizes the Secretary of the Interior to issue regulations concerning importation and interstate shipment of fish and to issue publications and make investigations for purposes of the Act.

Canadian-United States Boundary Waters Treaty—See Treaty between the United States and Great Britain Relating to Boundary Waters and Questions Arising between the United States and Canada

Canadian-United States Great Lakes Fisheries Convention—See Convention on Great Lakes Fisheries between the United States and Canada

Canadian-United States Migratory Bird Treaty —See Convention Between the United States and Great Britain (for Canada) for the Protection of Migratory Birds

Central Valley Project, California, Reauthorization Act of August 27, 1954 (16 U.S.C. 695d-695j; 68 Stat. 879).—Reauthorized the entire project originally authorized under the Act of August 26, 1937 (50 Stat. 844), and reauthorized by the Acts of October 17, 1940 (54 Stat., 1198), October 14, 1949 (63 Stat. 852), and September 26, 1950 (64 Stat. 1036). The 1954 Act declares use of water for fish and wildlife to be a purpose of the project in addition to all other previously stated purposes. Among other things, provides authority and other requirements for delivery of water to the Grasslands area of the San Joaquin Valley for waterfowl purposes.

Coastal Zone Management Act of 1972 (16 U.S.C. 1451-1464; 86 Stat. 1280), as amended.—Public Law 92-583, approved October 27, 1972, establishes a program aimed at assisting states in developing land and water use programs for the coastal zone. A grant-in-aid program is authorized under the administration of the Secretary of Commerce. Section 308 of the Act (16 U.S.C. 1456; 86 Stat. 1285) directs the Secretary of Commerce to consult and cooperate with other Federal agencies in carrying out his responsibilities under the Act, and prior to approval of any state's coastal zone management program which "includes requirements as to shorelands which also would be subject to any Federally supported national land use program," the Secretary of Commerce must obtain concurrence of the Secretary of the Interior.

Colorado River Basin Project Act (43 U.S.C. 616aa-1, 620, 620a, 620a-1, 620a-2, 620c-1, 620d-1, 620k, 620hh, 1501-1556; 82 Stat. 886), as amended.—Public Law 90-537, approved September 30, 1968, provides a program for the comprehensive development of water resources of the Colorado River Basin, and directs the Secretary of the Interior to develop, after consultation with affected states and appropriate Federal agencies, a regional water plan to serve as the framework under which projects in the Colorado River Basin may be coordinated and constructed.

Colorado River Storage Project Act (43 U.S.C. 620-620o, except certain sections classified to the Colorado River Basin Project Act; 70 Stat. 105), as amended.—Section 8 of this April 11, 1956, Act (43 U.S.C. 620g; 70 Stat. 110) authorizes and directs the Secretary of the Interior, in connection with the Colorado River Storage Project and participating projects, to investigate, plan, construct and operate facilities to mitigate losses of, and improve conditions for, fish and wildlife. Provides authority to acquire lands and to lease or convey lands and facilities to State and other agencies.

Columbia Basin Project Act (16 U.S.C. 835, 835c-835c-2, 835c-4; 57 Stat. 140), as amended and supplemented.—The Act of March 10, 1943, renamed and reauthorized the Grand Coulee Dam Project, originally authorized by the Act of August 30, 1935 (49 Stat. 1028), and amended generally the Act of May 27, 1937 (50 Stat. 208). An Act of October 9, 1940 (16 U.S.C. 835i; 54 Stat. 1085), supplementing the Project Act, authorized the Secretary of the Interior to contract with the State of Washington for maintenance and operation of fish hatcheries built as part of the fish protection program required on the Columbia Basin Project.

Columbia River Basin Fishery Development Act —See Mitchell Act

Comprehensive Employment and Training Act of 1973 (18 U.S.C. 665, 29 U.S.C. 801, 802, 811-822, 841-851, 871-875, 881-885, 911-929, 951-956, 981-992, 42 U.S.C. 2571 Note; 87 Stat. 839), as amended.—Public Law 93-203 of December 28, 1973, as amended December 31, 1974, by Public Law 93-567 (88 Stat. 1845) establishes among other things a Job Corps program under the administration of the Department of Labor to assist young people who need and can benefit from an unusually intensive program. The Secretary of Labor can enter into agreements with Federal, State and local agencies or private organizations for establishment and operation of Job Corps Centers. Agreements exist for such centers on U.S. Fish and Wildlife Service lands.

Congressional Budget and Impoundment Control Act of 1974 (1 U.S.C. 105, 2 U.S.C. 190a-1 *et seq.*, 31 U.S.C. 11 *et seq.*; 88 Stat. 297).—Public Law 93-344, July 12, 1974, changed the Federal fiscal year from July 1 through June 30 to October 1 through September 30, and made other changes in the government budgeting and funding process.

Conservation Programs on Certain Federal Lands (Military Reservations and Other Lands)—See Sikes Act

Convention between the Government of the United States of America and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction, and Their Environment (25 U.S.T. 3329; T.I.A.S. 7990), as amended.—This 1972 Convention is designed to provide for the protection of species of birds which are common to both countries, or which migrate between them by (1) enhancement of habitat, (2) exchange of research data, and (3) regulation of hunting. Signed at Tokyo on March 4, 1972, with ratification advised by the Senate on March 27, 1973, and documents of ratification exchanged September 19, 1972. The Convention entered into force September 19, 1974. An agreement amending the annex to the Convention by adding the Maloy bittern was effected by exchange of notes September 19, 1974, entering into force December 19, 1974 (25 U.S.T. 3373 T.I.A.S. 7990). This exchange also included a list of endangered birds as provided for in Article IV of the Convention. Implementing legislation for the United States was achieved by enactment of Public Law 93-300, June 1, 1975 (88 Stat. 190), amending the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711; 40 Stat. 755), as amended.

Convention between the United States and Great Britain (for Canada) for the Protection of Migratory Birds (39 Stat. 1702; TS 628).—This 1916 treaty adopted a uniform system of protection for certain species of birds which migrate between the United States and Canada, in order to assure the preservation of species either harmless or beneficial to man. Sets certain dates for closed seasons on migratory birds. Prohibits hunting insectivorous birds, but allows killing of birds under permit when injurious to agriculture. The Convention was signed at Washington, D.C., on August 16, 1916, and ratified by the United States on September 1, 1916, and by Great Britain on October 20, 1916. Documents of ratification exchanged December 7, 1916. Implementing legislation for the United States was accomplished by enactment of the Migratory Bird Treaty Act in 1918 (16 U.S.C. 703-711; 40 Stat. 755).

Convention between the United States of America and the Union of Soviet Socialist Republics Concerning the Conservation of Migratory Birds and Their Environment (not in force).—This Convention, signed in Moscow on November 19, 1976, provides for protection of species of birds that migrate between the United States and the Soviet Union or that occur in either country and "have common flyways, breeding, wintering, feeding or moulting areas." The Convention also encourages actions to identify and protect important habitat and to cooperate in measures to protect migratory birds identified as being in danger of extinction. Convention to remain in force for a period of 15 years from date of its entry in force and thereafter renewed automatically on an annual basis subject to termination by either party. Convention does not enter into force until the advice and consent of Congress is given and documents of ratification are exchanged. Implementing legislation is also required.

Convention between the United States of America and the United Mexican States for the Protection of Migratory Birds and Game Mammals (50 Stat. 1311; TS 912), as amended.—This 1936 treaty adopted a system for the protection of certain migratory birds in the United States and Mexico. Allows, under regulation, the rational use of certain migratory birds. Provides for enactment of laws and regulations to protect birds by establishment of closed seasons and refuge zones. Prohibits killing of insectivorous birds, except under permit when harmful to agriculture. Provides for enactment of regulations on transportation of game mammals across the United States-Mexican border. Signed in Mexico City, February 7, 1936, this treaty was ratified by the President of the United States, October 8, 1936, and documents of ratification were exchanged March 15, 1937, in Washington, D.C. United States implementation of the treaty was accomplished by amending the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711; 40 Stat. 755) on June 20, 1936 (49 Stat. 1556). The treaty was amended March 10, 1972 (23 U.S.T. 260; T.I.A.S. 7302), to add 32 additional families of birds including eagles, hawks, owls and *Corvidae* family.

Convention for the International Council for the Exploration of the Sea (ICES) (24 U.S.T. 1080; T.I.A.S. 7628).—This Convention, opened for signature in Copenhagen on September 12, 1964, provides a new "constitution" for the International Council for the Exploration of the Sea which was originally established in 1902 as a result of conferences held in Stockholm in 1899 and in Christiania in 1901. The ICES has as its purpose to: (a) "promote and encourage research and investigations for the study of the sea particularly those related to the living resources thereof;" (b) "draw up programmes required for this purpose and to organize . . . such research and investigations as may appear necessary;" and (c) "publish or otherwise disseminate the results of research and investigations." Eighteen countries are a party to this Convention including the United States. Senate advice and consent given March 1, 1967; ratification and accession approved by the President, April 24, 1967; documents deposited with the United Nations, April 18, 1973. The Convention entered into force, April 18, 1973.

Convention for the Northwest Atlantic Fisheries—See International Convention for the Northwest Atlantic Fisheries (ICNAF)

Convention on Great Lakes Fisheries between the United States and Canada (6 U.S.T. 2836; T.I.A.S. 3326), as amended.—This 1954 Convention was concluded in order to recognize that joint and coordinated efforts between the two governments are essential to determining the need for and type of measures which will make possible the maximum sustained productivity in Great Lakes fisheries of common concern. The Convention established a Great Lakes Fishery Commission with specified functions related to formulation and coordination of research programs including a comprehensive program for sea lamprey control, and publication of scientific and other information. Signed September 10, 1954, in Washington, D.C., the Convention was ratified by the United States on June 6, 1955, and by Canada on October 6, 1955. Ratifications were exchanged at Ottawa, Canada, on October 11, 1955, and the Convention entered into force on the same date. United States implementation of the Convention was achieved June 4, 1956, by enactment of Public Law 89-557, the Great Lakes Fishery Act of 1956 (16 U.S.C. 931-939c; 70 Stat. 242). The Convention was amended on May 19, 1967 (18 U.S.T. 1402; T.I.A.S. 6297) to increase the number of commissioners from each country from three to four.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (T.I.A.S. 8249).—Establishes a system of import/export regulations to prevent the commercial overexploitation of plants and animals listed in three appendices to the Convention. Different levels of trade regulations are provided depending on the threatened status of the listed species and the contribution trade makes to that condition. Procedures are provided for periodic amendments to the appendices. The Convention was signed by 80 nations in Washington, D.C., on March 3, 1973. United States ratification occurred on September 13, 1973, with documents submitted to the depository government (Switzerland), January 14, 1974. The Convention entered into force 90 days after ratification by the tenth nation, July 1, 1975. Implementing legislation for the United States was provided by enactment of Public Law 93-205, the Endangered Species Act of 1973 (16 U.S.C. 1531-1543; 87 Stat. 884). Designation of scientific and management authorities to represent the United States in Convention matters was achieved on April 13, 1976, by Executive Order 11911.

Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (56 Stat. 1354; TS 981).—Under this 1940 treaty, the governments of the United States and 17 other American Republics have expressed their wish to "protect and preserve in their natural habitat representatives of all species and genera of their native flora and fauna, including migratory birds" and to protect regions and natural objects of scientific value. The nations agreed to take certain actions to achieve these objectives, including the adoption of "appropriate measures for the protection of migratory birds of economic or esthetic value or to prevent the threatened extinction of any given species." The Convention was signed by the United States October 12, 1940, and ratified April 15, 1941. United States ratification documents deposited with the Pan American Union, Washington, D.C., April 28, 1941. Implementing legislation for the United States was achieved by enactment of Public Law 93-205, the Endangered Species Act of 1973 (16 U.S.C. 1531-1543; 87 Stat. 884), section 8(e) of which directs the President to designate the agencies "which shall act on behalf of and represent the United States in all regards as required by the Convention", and accomplished by Executive Order 11911, April 13, 1976.

Convention on Wetlands of International Importance Especially as Waterfowl Habitats (I.L.M. 11:963-976, September 1972).—This Convention, commonly referred to as the Ramsar Convention, was adopted in Ramsar, Iran, February 3, 1971, and opened for signature at UNESCO headquarters, July 12, 1972. The Convention entered into force after the required signatures of seven countries, December 21, 1975. The United States is not a party to this Convention (as of December 1976). The Convention includes criteria for designating wetlands and places emphasis on wetlands of high importance to waterfowl.

Cooperative Research and Training Units Act (16 U.S.C. 753a-753b; 74 Stat. 733).—Public Law 86-686 of September 2, 1960, authorizes the Secretary of the Interior to enter into cooperative agreements with colleges and universities, State fish and game agencies, and nonprofit organizations for the purpose of developing adequate, coordinated cooperative research and training programs for fish and wildlife resources. As of October 1, 1976, there were 20 cooperative wildlife units and 25 cooperative fishery units operated by the U.S. Fish and Wildlife Service at 26 colleges and universities throughout the country.

Criminal Code Provisions Relating to Fish and Wildlife—See Lacey Act of 1900 . . . Criminal Code Provisions; See also Refuge Trespass Act

Denmark-United States Agreement on Conservation of Atlantic Salmon—See Agreement between the United States and Denmark Relating to Conservation of Atlantic Salmon

Department of Transportation Act (49 U.S.C. 1651-1659, and other U.S.C. titles; 80 Stat. 931), as amended. —Section 4 of Public Law 89-670, October 15, 1966 (49 U.S.C. 1653(f); 82 Stat. 824), provides for maintenance of natural beauty on lands traversed by highway projects and for preservation of wildlife refuges through consultation with Secretary of the Interior.

Detail Personnel and Loan Equipment Act of May 10, 1974 (16 U.S.C. 743a; 88 Stat. 124).—Public Law 93-280 repealed the Act of March 3, 1885 (16 U.S.C. 743; 23 Stat. 494), entitled "Propagation of Food Fishes" and authorized the department in which the Coast Guard is operating, the Department of the Army, the Department of the Navy, the Department of the Air Force, the AEC (now ERDA) and NASA to detail to the Director of the U.S. Fish and Wildlife Service commissioned and enlisted personnel and civilian personnel for assistance in Service activities. Authorizes such departments to loan equipment to the Service. An annual report concerning the utilization of such personnel, equipment and costs, if any, is to be submitted by the Service to the Congress at the end of each fiscal year.

Dingell-Johnson Act—See Federal Aid in Fish Restoration Act

Duck Stamp Act—See Migratory Bird Hunting and Conservation Stamp Act

Eagle Protection—See Bald Eagle Act of 1940

Endangered Species Act of 1973 (16 U.S.C. 1531-1543; 87 Stat. 884), as amended.—Public Law 93-205, approved December 28, 1973, repealed the Endangered Species Conservation Act of December 5, 1969, Public Law 91-135 (83 Stat. 275) which had amended the Endangered Species Preservation Act of October 15, 1966, Public Law 89-669 (80 Stat. 926) and implemented the Convention on International Trade in Endangered Species of Wild Fauna and Flora (T.I.A.S. 8249) signed by the United States March 3, 1973, and the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere (50 Stat. 1354) signed by the United States October 12, 1940. The 1973 Endangered Species Act provides for the conservation of threatened and endangered species of fish, wildlife and plants by Federal action and by encouraging the establishment of State programs. Specific provisions include: authorizes the determination and listing of endangered and threatened species and the range in which such condition exists; prohibits unauthorized taking, possession, sale, transport, etc., of endangered species; authorizes an expanded program of habitat acquisition; authorizes the establishment of cooperative agreements and grant-in-aid to those States which establish and maintain an active and adequate program for endangered and threatened species; authorizes the assessment of civil and criminal penalties for violating the Act or regulations. Public Law 94-325, approved June 30, 1976 (90 Stat. 724), extended and increased the authorization of appropriations in section 15 of the 1973 Act; Public Law 94-359, approved July 12, 1976 (90 Stat. 911), exempted under certain conditions whale parts and products lawfully held prior to December 28, 1973, from the prohibitions in the Act and provided other amendments to facilitate administrative processes in emergency situations, clarified enforcement procedures, allowed disposal of forfeited and abandoned property and clarified the definition of "commercial activity."

Environmental Education Act (20 U.S.C. 1531-1536; 84 Stat. 1312), as amended.—Public Law 91-516, approved October 30, 1970, as amended by Public Law 93-278, May 10, 1974 (88 Stat. 121), expresses Congressional concern for public understanding of the Nation's environment and supports environmental education at various levels. Authorizes the Secretary of Health, Education and Welfare to cooperate and provide technical assistance and utilize services and personnel of Federal agencies in support of environmental education. Authorizes appropriations to carry out purposes of the Act.

Estuary Protection Act (16 U.S.C. 1221-1226; 82 Stat. 625).—Public Law 90-454, approved August 3, 1968, expresses Congressional policy on values of estuaries and need to conserve their natural resources. Authorizes the

Secretary of the Interior, in cooperation with other Federal agencies and the States, to study and inventory estuaries of the United States, including land and water of the Great Lakes. Authorizes the Secretary of the Interior to enter into cost-sharing agreements with States and subdivisions for permanent management of estuarine areas in their possession. Requires that the Secretary provide his views and recommendations on all projects which impact estuarine areas and which require Congressional approval.

Federal-Aid Highways Act of 1968 (23 U.S.C. 101 *et seq.*, and other U.S.C. titles; 82 Stat. 815), as amended. —Public Law 90-495, approved August 23, 1968, and amended, provides in section 18(a) (23 U.S.C. 138; 82 Stat. 823) for a special effort to preserve natural beauty of such areas as public parks, recreation areas, refuges and historic sites in developing transportation systems, and directs the Secretary of Transportation to cooperate and consult with the Secretary of the Interior and other Federal agencies before approving any program or project which requires the use of any publicly owned lands from certain specified areas including parks and refuges.

Federal Aid in Fish Restoration Act (16 U.S.C. 777-777k; 64 Stat. 430), as amended.—This August 9, 1950, Act as amended several times is commonly referred to as the "Dingell-Johnson Act" and provides Federal aid to the States for management and restoration of fish having "material value in connection with sport or recreation in the marine and/or fresh waters of the United States." Funds from a 10 percent excise tax on certain items of sport fishing tackle (Internal Revenue Code of 1954, sec. 4161) are appropriated to the Secretary of the Interior annually and apportioned to States on a formula basis for paying up to 75 percent of the cost of approved land acquisition, research, development and management projects. Amendments October 23, 1970, by Public Law 91-503 (84 Stat. 1101) provided, among other things, for development of comprehensive fish and wildlife resource management plans as an optional means for participating in the program. As of 1975, the twenty-fifth year of the program, some $182.7 million had been apportioned to the States for fish restoration projects.

Federal Aid in Wildlife Restoration Act (16 U.S.C. 669-669i; 50 Stat. 917), as amended.—This September 2, 1937, Act as amended several times is commonly referred to as the "Pittman-Robertson Act" and provides Federal aid to States for wildlife restoration work. Under the Act, funds from an 11 percent excise tax on sporting arms and ammunition (Internal Revenue Code of 1954, sec. 4161(b)) are appropriated to the Secretary of the Interior annually and apportioned to States on a formula basis for paying up to 75 percent of the cost of approved land acquisition, research, development and management projects. Public Law 91-503, approved October 23, 1970 (84 Stat. 1097), added an 11 percent tax on pistols and revolvers, one-half of which may be used by the States for hunter safety programs. This amendment also provided for development of comprehensive fish and wildlife management plans as an optional means for participating in the program. On October 25, 1972, the Act was further amended by Public Law 92-558 (86 Stat. 1172) to add a 10 percent excise tax on bows, arrows, parts and accessories for use in wildlife projects or hunter safety programs. Amended June 8, 1974, by Public Law 93-313 (88 Stat. 238) to provide for a six month delay, until January 1, 1975, in initiation of collection of the excise tax on bows, arrows, parts and accessories. As of 1976, the thirty-eighth year of the program, $688 million had been apportioned to the States for wildlife restoration and hunter safety projects.

Federal Assistance, Resource Conservation and Development Projects Act—See Bankhead-Jones Farm Tenant Act

Federal Environmental Pesticide Control Act of 1972 (7 U.S.C. 136-136y; 86 Stat. 975), as amended.—Public Law 92-516, approved October 21, 1972, amended the Federal Insecticide, Fungicide and Rodenticide Act of June 25, 1947 (61 Stat. 163) and established under the Administrator of the Environmental Protection Agency a program for controlling the application of pesticides to assure greater protection to man and the environment. Provides criminal and civil penalties for violation of the Act. It extends Federal registration and regulation to all pesticides, including those distributed or used within individual States. It provides for classifying pesticides for "general" or "restricted" use, and that "restricted" pesticides may be used only by or under the supervision of certified applicators.

Federal Insecticide, Fungicide and Rodenticide Act—See Federal Environmental Pesticide Control Act of 1972

Federal Laboratory Animal Welfare Act—See Animal Welfare Act

Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701-1771, and other U.S.C. sections; 90 Stat. 2743).—Public Law 94-579, approved October 21, 1976, constitutes an "Organic Act" for the Bureau of Land Management, Department of the Interior. Among other things, establishes new procedures for creating, modifying and terminating withdrawals and reservations of public lands. New withdrawals of public lands for refuge purposes are subject to withdrawal procedures of the Act; however, lands so added cannot be removed from the system except by Act of Congress pursuant to the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee; 80 Stat. 927), as amended.

Federal Power Act (16 U.S.C. 791a-825r; 41 Stat. 1063), as amended.—This June 10, 1920, Act as amended provides, among other things, for cooperation between the Federal Power Commission and other Federal agencies in the investigation of proposed power projects, and for other agencies to provide information to FPC upon request. Provides that licenses issued by the FPC for hydroelectric projects within Indian reservations, national wildlife refuges and other specified areas that are withdrawn from the public domain must contain conditions that the Secretary of the Interior may require. Requires a Commission finding before approving private hydroelectric applications, that the project is "best adapted" to a comprehensive waterway development plan for all public uses, including recreation. Requires the licensee to construct fishways when required by the Secretary of the Interior.

Federal Property and Administrative Services Act of 1949 (40 U.S.C. 471-535, and other U.S.C. sections; 63 Stat. 378), as amended.—This June 30, 1948, Act as amended several times provides for management and disposal of government surplus property (excess property not required for the needs of any Federal agencies) and excess property (property under the control of any Federal agency which is not required for its needs). Public Law 94-519, approved October 17, 1976 (90 Stat. 2451), provided major changes to section 203 of the Act (40 U.S.C. 484) regarding procedures for disposal of surplus property.

Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1251-1265, 1281-1292, 1311-1328, 1341-1345, 1361-1376, and other U.S.C. titles; 86 Stat. 816), as amended.—Title IV of Public Law 92-500 (33 U.S.C. 1341-1345; 86 Stat. 877) sets up a Federal permit and license system to carry out certain pollution discharge activities in navigable waters. Section 402 (33 U.S.C. 1342; 86 Stat. 880) requires permits from the Environmental Protection Agency for the discharge of any pollutant into navigable waters, the so called National Pollutant Discharge Elimination System Permits. Section 403 (33 U.S.C. 1343; 86 Stat. 883) provides for control of ocean discharges. Section 404 (33 U.S.C. 1344; 86 Stat. 884) provides for the Corps of Engineers to issue permits for the discharge of dredged or fill materials into the navigable waters with oversight by the Environmental Protection Agency. Section 405 (33 U.S.C. 1345; 86 Stat. 884) provides for regulating the disposal of sewage sludge. Permit applications may be reviewed by the U.S. Fish and Wildlife Service for impacts on fish and wildlife.

Federal Water Project Recreation Act (16 U.S.C. 460*l*-12-460*l*-21; 79 Stat. 213), as amended.—Public Law 89-72, approved July 9, 1965, declares the intent of Congress that recreation and fish and wildlife enhancement shall be fully considered purposes of Federal water-development projects if non-Federal public bodies agree to: (1) bear not less than half the separable costs allocated to these purposes; (2) administer project land and water areas devoted to the purposes; and (3) bear all costs of operation, maintenance and replacement. Where Federal lands or authorized Federal programs for fish and wildlife conservation are involved, the cost-sharing requirements are exempted. This Act provides for expenditure of Federal water project funds for land acquisition needed to establish refuges for migratory waterfowl when recommended by the Secretary of the Interior, and authorizes the Secretary to provide facilities for outdoor recreation and fish and wildlife at all reservoirs under his control except those within national wildlife refuges. The provisions of this law do not apply to projects constructed under authority of the Small Reclamation Projects Act of August 6, 1956 (43 U.S.C. 422a-422k; 70 Stat. 1044), as amended, the Watershed Protection and Flood Prevention Act of August 4, 1954 (16 U.S.C. 1001-1009, 33 U.S.C. 701b; 68 Stat. 666), as amended, or to the Tennessee Valley Authority except that with regard to TVA an amendment October 21, 1976, Public Law 94-576 (90 Stat. 2728) authorized that agency to recognize and provide recreational and other public uses at its projects consistent with the project purpose.

Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j; 70 Stat. 1119), as amended.—The Act of August 8, 1956, as frequently amended establishes a comprehensive national fish and wildlife policy. Among other things, directs a program of continuing research, extension and information services on fish and wildlife matters at national as well as international levels. Section 7(a) of the Act (16 U.S.C. 742f; 70 Stat. 1122) authorizes the Secretary of the Interior to: (1) develop measures for "maximum sustainable production of fish", (2) make economic studies and recommend measures to insure stability of the domestic fisheries, (3) undertake promotional and information activities to stimulate consumption of fishery products, (4) take steps "required for the development, advancement, management, conservation, and protection of the fisheries resources", and (5) take steps "required for the development, management, advancement, conservation, and protection of wildlife resources through research, acquisition of refuge lands, development of existing facilities, and other means." Section 7(a)(1) of the Land and Water Conservation Fund Act of 1965 as amended September 28, 1976, by Public Law 94-422 (16 U.S.C. 460*l*-9; 90 Stat. 1318) provides authority to use LWCF money for acquisition of refuge areas under paragraph (5) of section 7(a) of the 1956 Act. An annual report to the Congress on U.S. Fish and Wildlife Service activities is required by section 9 of the 1956 Act (16 U.S.C. 742h; 70 Stat. 1123). The 1956 Act confirmed the position of Commissioner of Fish and Wildlife and a United States Fish and Wildlife Service in the Department of the Interior and established a Bureau of Sport Fisheries and Wildlife and a Bureau of Commercial Fisheries.[1] Reorganization Plan No. 4, October 3, 1970 (84 Stat. 2090), abolished the Bureau of Commercial Fisheries and transferred functions related to commercial fisheries and marine sport fisheries, except Great Lakes fishery research and certain other fishery related activities, to the Department of Commerce, National Oceanic and Atmospheric Administration. Effective July 1, 1974, the Bureau of Sport Fisheries and Wildlife and the position of Commissioner were abolished by Public Law 93-271, approved April 22, 1974 (88 Stat. 92). This amendment to the 1956 Act vested responsibilities of the Bureau in a redesignated United States Fish and Wildlife Service under an Assistant Secretary of the Interior for Fish and Wildlife and Parks. This amendment also specified qualifications of the Director of the Service and established method of appointment. Public Law 92-159, approved November 18, 1971 (85 Stat. 480), and subsequently amended by Public Law 92-502, approved October 18, 1972 (86 Stat. 905), added to the 1956 Act a new section 13 (16 U.S.C. 742j-l) which is commonly referred to as the Airborne Hunting Act or Shooting from Aircraft Act and prohibits taking or harassing wildlife from aircraft except for certain specified reasons including protection of wildlife, livestock and human health or safety as authorized by a Federal or State issued license or permit. States authorized to issue permits are required to file reports with the Secretary of the Interior containing information on any permits issued.

Fish and Wildlife Conservation at Federal Reclamation Projects.—Authorities for fish and wildlife conservation at water resources projects of the Bureau of Reclamation, Department of the Interior, are found in a variety of specific and omnibus authorizing statutes. General authority for conservation measures to be considered in planning reclamation projects is contained in such Acts as the Fish and Wildlife Coordination Act (16 U.S.C. 661-666c; 48 Stat. 401), as amended, and the Small Reclamation Projects Act of 1956 (43 U.S.C. 422a-422k; 70 Stat. 1044), as amended. Statutes authorizing specific projects which include conservation measures include but are not limited to the following:

- Arbuckle Project, Oklahoma (43 U.S.C. 616*l*(a); 76 Stat. 395).—Public Law 87-594, approved August 24, 1962.
- Baker Project, Oregon (43 U.S.C. 616v; 76 Stat. 634).—Public Law 87-706, approved September 24, 1962.

- Canadian River Project, Texas (43 U.S.C. 600d; 78 Stat. 744).—Public Law 88-536, approved August 31, 1964.
- Central Valley Project, California (50 Stat. 844), as amended.—For additional information see main entry in this leaflet under Central Valley Project, California, Reauthorization Act of August 27, 1954.
  - —Auburn-Folsum South Unit, California (43 U.S.C. 616ccc; 79 Stat. 616).—Public Law 89-161, approved September 2, 1965.
  - —Trinity River Division, California (69 Stat. 719).—Section 2 of the Act of August 12, 1955.
- Chief Joseph Dam Project.
  - —Oroville-Tonasket Unit, Washington (76 Stat. 761).—Section 3 of the Act of October 9, 1962.
  - —Whitestone Coulee Unit, Washington (43 U.S.C. 616uu, 616vv-1, 616vv-3; 78 Stat. 704), as amended.—Public Law 88-599, approved September 18, 1964; Public Law 89-557, approved September 7, 1966.
- Cibolo Project, Texas (43 U.S.C. 600f-2(d), 600f-3; 88 Stat. 1491, 1492).—Public Law 93-493, approved October 27, 1974.
- Colorado River Basin Project (43 U.S.C. 616aa-1 *et seq.*; 82 Stat. 886), as amended.—For additional information see main entry in this leaflet under Colorado River Basin Project Act.
- Colorado River Storage Project (43 U.S.C. 620 *et seq.*; 70 Stat. 105), as amended.—For additional information see main entry in this leaflet under Colorado River Storage Project Act.
- Columbia Basin Project (16 U.S.C. 835 *et seq.*; 57 Stat. 14), as amended.—For additional information see main entry in this leaflet under Columbia Basin Project Act; see also Mitchell Act.
- Crooket River Project, Oregon (43 U.S.C. 615i; 70 Stat. 1059).—Act of August 6, 1956.
- Dalles Project, Oregon (43 U.S.C. 615w(d); 74 Stat. 882).—Public Law 86-745, approved September 13, 1960.
- Dixie Project, Utah (43 U.S.C. 616ff; 78 Stat. 849).—Public Law 88-565, approved September 2, 1964.
- Fruitland Mesa Project, Colorado (43 U.S.C. 616ii, 616kk; 78 Stat. 852).—Public Law 88-568, approved September 2, 1964.
- Fryingpan-Arkansas Project, Colorado (43 U.S.C. 616c; 76 Stat. 391).—Public Law 87-590, approved August 16, 1962.
- Klamath Project, Oregon-California (43 U.S.C. 601-612; 33 Stat. 714), as amended.—Act of February 9, 1905. For additional information see Tule Lake-Klamath Refuges under main entry entitled National Wildlife Refuge Acts.
- Little Wood River Project, Idaho (43 U.S.C. 615m; 70 Stat. 1059).—Act of August 6, 1956.
- Mann Creek Project, Idaho (43 U.S.C. 616i; 76 Stat. 389).—Public Law 87-589, approved August 16, 1962.
- Missouri River Basin Project, Nebraska, Kansas, Montana, Wyoming, North Dakota, South Dakota (58 Stat. 887), as amended and supplemented.—Flood Control Act of December 22, 1944.
  - —Garrison Diversion Unit, North and South Dakota (79 Stat. 433).—Public Law 89-108, approved August 5, 1965, made certain provisions in connection with the construction of the Garrison Diversion Unit, Missouri River Basin Project, by the Secretary of the Interior, including authorization to construct, operate and maintain public outdoor recreation and fish and wildlife enhancement facilities. The Act gives the Secretary broad authority to acquire lands needed for fish and wildlife enhancement or loss mitigation in conjunction with the project.
  - —North Loup Division, Pick-Sloan Missouri Basin Program, Nebraska (43 U.S.C. 615ffff; 86 Stat. 970).—Public Law 92-514, approved October 20, 1972 (Reclamation Project Authorization Act of 1972), reauthorized the project originally authorized by section 9 of the Flood Control Act of December 22, 1944 (58 Stat. 891).
  - —Oahe Unit, South Dakota (43 U.S.C. 616uuu; 82 Stat. 624).—Public Law 90-543, approved August 3, 1968.
  - —O'Neill Unit, Pick-Sloan Missouri Basin Program, Nebraska (43 U.S.C. 615yyy; 86 Stat. 969).—Public Law 92-514, approved October 20, 1972 (Reclamation Project Authorization Act of 1972), reauthorized the project originally authorized by the Act of August 21, 1954 (86 Stat. 757).
- Mountain Park Project, Oklahoma (43 U.S.C. 616eeee; 82 Stat. 854).—Public Law 90-503, approved September 21, 1968.
- Nueces River Project, Texas (43 U.S.C. 600g-2(d), 600g-3; 88 Stat. 1496, 1497).—Public Law 93-493, approved October 27, 1974.
- Palmetto Bend Project, Texas (43 U.S.C. 616iiii-jjjj; 82 Stat. 999, 1000).—Public Law 90-562, approved October 12, 1968.
- Pecos River Basin Act, New Mexico-Texas (72 Stat. 17), as amended.—Public Law 85-333, approved February 20, 1958; Public Law 88-594, approved September 12, 1964 (78 Stat. 942).
  - —Brantley Project, Pecos River Basin, New Mexico (43 U.S.C. 615kkk, 615mmm; 86 Stat. 966, 967).—Public Law 92-514 (Reclamation Project Authorization Act of 1972), approved October 20, 1972.
- Pick-Sloan Missouri Basin Project.—See Missouri River Basin Project under main entry entitled Fish and Wildlife Conservation at Federal Reclamation Projects.
- Rogue River Basin Project, Merlin Division, Oregon (43 U.S.C. 616oooo; 84 Stat. 273).—Public Law 91-270, approved May 28, 1970.
- San Luis Valley Project, Closed Basin Division, Colorado (43 U.S.C. 615aaa, 615ddd, 615fff; 86 Stat. 964, 965, 966).—Public Law 92-514, approved October 20, 1972 (Reclamation Project Authorization Act of 1972), directs in title I, among other things, establishment of the Mishak National Wildlife Refuge and supply of water for operation of that refuge and the Alamosa National Wildlife Refuge.
- Savery-Pot Hook Project, Colorado-Wyoming (43 U.S.C. 616ii, 616kk; 78 Stat. 852).—Public Law 88-568, approved September 2, 1964.
- Southern Nevada Project, Nevada (43 U.S.C. 616hhh; 79 Stat. 1068).—Public Law 89-292, approved October 22, 1965.
- Tualatin Project, Oregon (43 U.S.C. 616ppp; 80 Stat. 822).—Public Law 89-596, approved September 20, 1966.
- Upper Snake River Project, Salmon River Division, Idaho (43 U.S.C. 615ppp, 615sss; 86 Stat. 967, 968).—Public Law 92-154 (Reclamation Project Authorization Act of 1972), approved October 20, 1972.
- Walla Walla Project, Touchet Division, Oregon-Washington (43 U.S.C. 616vvvv; 616yyyy; 84 Stat. 409, 410), as amended.—Public Law 91-307, approved July 7, 1970, authorized appropriations to the U.S. Fish and Wildlife Service for enhancement of anadromous fish. As amended by Public Law 94-175, approved December

23, 1975 (89 Stat. 1030), the Bureau of Reclamation required to budget for such enhancement, not the Service.

- Washoe Project, Nevada-California (43 U.S.C. 614c; 70 Stat. 777).—Act of August 1, 1956.

Fish and Wildlife Conservation at Federal Water Resource Development Projects of the Corps of Engineers.—Fish and wildlife conservation at U.S. Army Corps of Engineers projects for navigation, flood control, river and harbor improvement and other purposes are provided for under various specific and general (omnibus type) project authorizing statutes. Generally, conservation measures are not detailed in the project authorization but are contained in a report of the Chief of Engineers which is usually referenced in the statute. Since 1934 the Fish and Wildlife Coordination Act (16 U.S.C. 661-666c; 48 Stat. 401), as amended, has provided the basic authority for incorporating fish and wildlife conservation measures in water development projects. Some omnibus project authorizing Acts have also included broad authority for consideration of conservation measures as well as specific measures to be incorporated into each project authorized, and the following are a few examples of such Acts:

- Flood Control Act of 1944 (16 U.S.C. 460d, 825s, and various sections of title 33 and 43 U.S.C.; 58 Stat. 887), as amended and supplemented.—See main entry in this leaflet under Flood Control Act of 1944.
- Rivers and Harbors Appropriation Act of August 11, 1888 (33 U.S.C. 608; 25 Stat. 425).—Section 11 of this Act is classified to 33 U.S.C. 608 and provides discretionary authority for the construction of fishways whenever river and harbor improvements obstruct fish passages. The Act also authorizes many specific projects not generally classified to the Code.
- Rivers and Harbors Appropriation Act of March 3, 1899 (33 U.S.C. 401; 30 Stat. 1151).—See main entry in this leaflet under Rivers and Harbors Act of 1899.
- Rivers and Harbors Act of June 20, 1938 (33 U.S.C. 540, and other U.S.C. sections; 52 Stat. 802), as amended and supplemented.—Section 1 of this Act is classified to 33 U.S.C. 540 and provides for wildlife conservation to be given "due regard" in improvements of rivers, harbors and other waterways. The Act also authorizes over 50 specific projects which are not generally classified to the Code.
- Water Resources Development Act of 1976 (90 Stat. 2917).—Public Law 94-587, approved October 22, 1976, authorizes certain new projects and amends certain existing projects, and includes specific conservation measures for some of the projects including but not limited to: (1) lower Snake River fish and wildlife compensation plan, (2) White River Basin, Beaver Dam trout production measures (fish hatchery), and (3) Mississippi River "GREAT River Study."

Fish and Wildlife Coordination Act (16 U.S.C. 661-666c; 48 Stat. 401), as amended.—The Act of March 10, 1934, as amended by the Acts of August 14, 1946 (60 Stat. 1080), August 12, 1958, Public Law 85-624 (72 Stat. 563) and July 9, 1965, Public Law 89-72 (79 Stat. 216), authorizes the Secretary of the Interior to assist Federal, State and other agencies in development, protection, rearing and stocking fish and wildlife on Federal lands, and to study effects of pollution on fish and wildlife. Provides for donating land and funds in futhering purposes of Act and for appropriation of funds. Requires consultation with the U.S. Fish and Wildlife Service and the wildlife agency of any State wherein the waters of any stream or other water body are proposed or authorized to be impounded, diverted, channelized or otherwise controlled or modified by any Federal agency, or any private agency under Federal permit or license, with a view to preventing loss of or damage to wildlife resources in connection with such water resource project. Authorizes Federal water resource agencies to acquire lands or interests in connection with water use projects specifically for mitigation and enhancement of fish and wildlife, and provides for management of such lands by the U.S. Fish and Wildlife Service or State wildlife agencies. Excludes projects involving impoundments of less than 10 acres and Tennessee Valley Authority projects.

Fish Research and Experimentation Program—See Fish-Rice Rotation Farming Program Act of March 15, 1958

Fish-Rice Rotation Farming Program Act of March 15, 1958 (16 U.S.C. 778-778c; 72 Stat. 35).—Public Law 85-342 directs the Secretary of the Interior and authorizes the appropriations of funds to establish experiment stations for research and experimentation to: (1) determine species of fishes most suitable for culture on a commercial basis in shallow reservoirs and flooded rice lands; (2) determine methods for production of fingerling fishes for stocking in reservoirs; (3) develop methods for the control of parasites and diseases; (4) develop economical methods for raising the more desirable fish; (5) determine, in cooperation with the Department of Agriculture, the effect of fish-rice rotations, including crops other than rice commonly grown on rice farms, upon both the fish and other crops; and (6) develop suitable methods for harvesting the fish crop and preparing it for marketing. Authorizes the acquisition of lands and construction of facilities, cooperation with States and others, and dissemination of research results.

Fishery Conservation and Management Act of 1976 (16 U.S.C. 1801-1802, 1811-1813, 1821-1825, 1851-1862, 1882; 90 Stat. 331).—Public Law 94-265, approved April 13, 1976, establishes a 200-mile fishery conservation zone, effective March 1, 1977, and among other things, establishes Regional Fishery Management Councils in which the U.S. Fish and Wildlife Service is represented.

Flood Control Act of 1944 (16 U.S.C. 460d, 825s, and various sections of title 33 and 43 U.S.C.; 58 Stat. 887), as amended and supplemented.—The Act of December 22, 1944, as amended and supplemented by other Flood Control Acts and River and Harbor Acts authorizes various Corps of Engineers water development projects. Section 4 of the 1944 Act (16 U.S.C. 460d; 58 Stat. 889) authorizes the Corps of Engineers to construct and operate public parks and recreation facilities, and to permit local interests to do the same at water resource development projects. This section also provides for leasing of lands at water projects for public purposes with preference to Federal, State or local governments.

Flood Disaster Protection Act of 1973 (42 U.S.C. 4001-4128, and other U.S.C. titles; 87 Stat. 979), as amended.—Also referred to as the National Flood Insurance Act, Public Law 93-234, approved December 31, 1973, and amended, provides for a National Flood Insurance Program under the jurisdiction of the Secretary of Housing and Urban Development and directs the coordination of flood insurance with land management programs in flood-prone areas.

Freedom of Information Act (5 U.S.C. 552; 88 Stat. 1561).—Public Law 93-502 of November 21, 1974, requires all Federal agencies to make available to the public for inspection and copying administrative staff manuals and staff instructions, official published and unpublished policy statements, final orders deciding case adjudication and other documents. Special exemptions have been reserved for nine categories of privileged material, including but not limited to confidential matters relating to National defense or foreign policy, law enforcement records and trade or commercial secrets. The Act requires the party seeking the information to pay search and duplication costs.

Fur Seal Act of 1966 (16 U.S.C. 1151-1187; 80 Stat. 1091).—Public Law 89-702, approved November 2, 1966, as amended, prohibits, except under certain conditions, the taking, possession, etc., of fur seals and sea otters. With regard to sea otters, authorizes the Secretary to sell or otherwise dispose of skins and products thereof forfeited or taken by the Secretary on the high seas or within the Aleutian Islands National Wildlife Refuge. Proceeds to be deposited in the Pribilof Islands Fund.

Game Management Supply Depots Act of June 24, 1936 (16 U.S.C. 667; 49 Stat. 1913).—This Act directs that appropriations made for administration of wildlife refuges be made available for purchase, transportation and handling of supplies and materials for distribution at cost from game management supply depots to projects, and the project be specifically charged and funds transferred.

Game Range Act—See National Wildlife Refuge System Administration Act of 1966

Great Lakes Basin Compact Act (82 Stat. 414).—Public Law 90-419 granted consent of Congress to the Compact entered into by eight States, and created the Great Lakes Commission.

Great Lakes Fishery Act of 1956 (16 U.S.C. 931-939c; 70 Stat. 242).—This Act of June 4, 1956, authorizes the Secretary of the Interior to act for and on behalf of the United States in the exercise of the powers granted by the 1954 Convention on Great Lakes Fisheries (6 U.S.T. 2836; T.I.A.S. 3326), as amended. The Act sets forth the procedures for carrying out programs under the Convention including: (1) appointment and compensation of commissioners and an advisory committee, (2) acquisition of real property; (3) construction, operation and maintenance of sea lamprey control works; and (4) coordination and consultation with States and other Federal agencies. Provides authority for the appropriation of funds to carry out the provisions of the Convention and the Act.

Historic Sites Act—See Historic Sites, Buildings and Antiquities Act

Historic Sites, Buildings and Antiquities Act (16 U.S.C. 461-467; 49 Stat. 666), as amended.—This Act of August 21, 1935, also popularly known as simply the Historic Sites Act, as amended by Public Law 89-249, October 9, 1965 (79 Stat. 971), declares it a national policy to preserve historic sites and objects of national significance including those located on refuges. Provides procedures for designation administration and protection of sites, and establishes an Advisory Board. Among other things, National Landmarks are designated under authority of this Act, and as of January 1976, 24 national wildlife refuges contained such sites.

Hunting Stamp Act—See Migratory Bird Hunting and Conservation Stamp Act

Injurious Wildlife Regulation—See Lacey Act of 1900 . . . Criminal Code Provisions (18 U.S.C. 42)

International Convention for the Northwest Atlantic Fisheries (ICNAF) (1 U.S.T. 477; T.I.A.S. 2089).—This Convention entered into force July 3, 1950, and has as its purpose the "investigation, protection and conservation of the fisheries of the Northwest Atlantic Ocean, in order to make possible the maintenance of a maximum sustained catch from those fisheries." Eighteen countries are a party including the United States. Senate advice and consent provided, August 17, 1949; ratified by the President, September 1, 1949, with documents deposited on that same date. The Northwest Atlantic Fisheries Act of 1950 (16 U.S.C. 981-991; 64 Stat. 1067), as amended, provides implementing authority.

International Council for the Exploration of the Sea—See Convention for the International Council for the Exploration of the Sea (ICES)

International Trade in Endangered Species of Wild Fauna and Flora Convention—See Convention on International Trade in Endangered Species of Wild Fauna and Flora

Japanese-United States Migratory Bird Treaty—See Convention between the Government of the United States of America and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction, and their Environment

Lacey Act of 1900 (16 U.S.C. 701, 702; 31 Stat. 187, 32 Stat. 285), as amended; **Criminal Code Provisions** (18 U.S.C. 42-44; 62 Stat. 687), as amended.—The Lacey Act of May 25, 1900, as amended, states that the duties of the Department of the Interior (Agriculture prior to the 1939 Reorganization Plan No. II) include conservation, preservation and restoration of "game birds and other wild birds," and authorizes measures for their restoration from such funds as Congress may appropriate. Authority is also provided to "regulate the introduction of American or foreign birds or animals" into new locations, and to collect and publish information on wild birds. The Act of June 25, 1948 (18 U.S.C. 42-44; 62 Stat. 687), as amended, the Criminal Code Provisions, was derived from sections 2 through 4 of the Lacey Act of 1900 (31 Stat. 188), and provides enforcement authorities and penalties for violation of various wildlife related Acts and regulations. Section 42 of title 18 as amended May 24, 1949 (63 Stat 89), and September 2, 1960, Public Law 86-702 (74 Stat. 753), prohibits importation of wild vertebrates and other animals declared by the Secretary of the Interior to be injurious to man, agriculture, wildlife resources, etc., except under certain circumstances and pursuant to regulations. Section 43 of Title 18 was amended generally December 5, 1969, by section 7(a) of Public Law 91-135 (88 Stat. 279) and prohibits the transportation of wildlife or their parts or products (other than migratory birds protected under the Migratory Bird Treaty Act (16 U.S.C. 703-711; 40 Stat. 755), as amended) taken or possessed in violation of Federal, State or foreign laws or regulations issued pursuant thereto. Section 44 provides for labeling (or otherwise identifying contents) of packages containing wildlife transported in interstate or foreign commerce.

Land and Water Conservation Fund Act of 1965 (16 U.S.C. 460*l*-4-460*l*-11; 78 Stat. 897), as amended.—Public Law 88-578, approved September 3, 1964, created a special Land and Water Conservation Fund derived from various types of revenue, and authorizes appropriations from the fund for (1) matching grants to States for outdoor recreation projects, and (2) various Federal purposes. As amended by Public Law 94-422, approved September 28, 1976 (90 Stat. 1313), funds are authorized for, among other things, the National Wildlife Refuge System for acquisition of (1) endangered and threatened species habitat under section 5(a) of the Endangered Species Act of 1973 (16 U.S.C. 1534(a); 87 Stat. 889), (2) areas authorized by section 2 of the Refuge Recreation Act (16 U.S.C. 460k-1; 76 Stat. 653), as amended, (3) areas under section 7(a)(5) of the Fish and Wildlife Act of 1956 (16 U.S.C. 742f(5); 70 Stat. 1122), except migratory waterfowl areas which are authorized by the Migratory Bird Conservation Act (16 U.S.C. 715-715r; 45 Stat. 1222), as amended, and (4) any areas authorized by specific Acts of Congress. Public Law 94-422 also made major amendments to the National Historic Preservation Act of 1966 (16 U.S.C. 470 *et seq.*; 80 Stat. 915), as amended.

Lea Act (16 U.S.C. 695-695c; 62 Stat. 238).—This May 18, 1948, law authorizes the acquisition and development of management areas in California for waterfowl and other wildlife by the Secretary of the Interior provided the State acquires equivalent acreage.

Marine Fisheries Conservation Act—See Fishery Conservation and Management Act of 1976

Marine Mammal Protection Act of 1972 (16 U.S.C. 1361, 1362, 1371-1384, 1401-1407; 86 Stat. 1027), as amended. —Public Law 92-522, approved October 21, 1972, establishes a Federal responsibility for conservation of marine mammals with management vested in the Department of the Interior for sea otter, walrus, polar bear, dugong and manatee and with the Department of Commerce responsible for all members of the order *Cetacea* and *Pennepeds* other than walrus. With certain specified exceptions the Act establishes a moratorium on the taking and importation of marine mammals and products made from them, and establishes procedures for waiving the moratorium and returning management responsibilities to the States. Establishes a Marine Mammal Commission to coordinate research and take part in the regulatory processes. An annual report to the Congress is required by January 31 of each year. Authorizes the appropriation of funds for research and other activities under the Act through fiscal year 1977.

Marine Protection, Research and Sanctuaries Act of 1972 (16 U.S.C. 1431-1434, 33 U.S.C. 1401-1444; 86 Stat. 1052), as amended.—Title I of Public Law 92-532, approved October 23, 1972 (33 U.S.C. 1411-1421; 86 Stat. 1053), as amended, establishes a program under the administration of the Environmental Protection Agency to regulate dumping of materials into ocean waters. Title II (33 U.S.C. 1441-1444; 86 Stat. 1060) directs the Secretary of Commerce in coordination with the Coast Guard and EPA, and in consultation with the Secretary of the Interior and other agencies, to determine long range effects of pollution, overfishing and other activities on ocean ecosystems through research and monitoring. Title III (16 U.S.C. 1431-1434; 86 Stat. 1061), as amended, authorizes the Secretary of Commerce to protect and designate marine sanctuaries after consultation with the Secretary of the Interior and other agencies.

Marine Sanctuaries Act—See Marine Protection, Research and Sanctuaries Act of 1972

McNary-McSweeney Act (16 U.S.C. 581-581i; 45 Stat. 699), as amended.—This May 22, 1928, Act, as amended, authorizes investigations, experiments and tests by the Secretary of Agriculture affecting reforestation and forest products. Section 5 (16 U.S.C. 581d; 45 Stat. 701) authorizes appropriations for experiments and investigations on life histories and habits of "forest animals, birds, and wildlife," whether injurious to forest growth or of value as a supplemental resource, and for developing methods for management and control of wildlife.

Mexican-United States Migratory Bird Treaty—See Convention between the United States of America and the United Mexican States for the Protection of Migratory Bird and Game Mammals

Migratory Bird Conservation Act (16 U.S.C. 715-715d, 715e, 715f-715k, 715n-715r; 45 Stat. 1222), as amended.—The Act of February 18, 1929, as amended establishes a Migratory Bird Conservation Commission to approve areas recommended by the Secretary of the Interior for acquisition with Migratory Bird Conservation Funds. Commission consists of the Secretary of the Interior, as chairman, the Secretaries of Transportation and Agriculture, two members of the Senate and two of the House of Representatives, and a member ex officio from each State in which acquisition is being considered. The Commission through its chairman is directed to report by the first Monday in December of each year to Congress on its activities. The Secretary of the Interior is authorized to cooperate with local authorities in wildlife conservation, as well as conduct investigations, publish documents related to North American birds, and to maintain and develop refuges. Provides for cooperation with States in enforcement. Procedures are established for acquisition by purchase, rental or gift of areas approved by the Commission as sanctuaries for migratory birds, and an amendment February 17, 1976, Public Law 94-215 (90 Stat. 190), clarified that authority as applying to the purchase or rental of a partial interest.

Migratory Bird Hunting and Conservation Stamp Act (16 U.S.C. 718-718h; 48 Stat. 452), as amended.—The "Duck Stamp Act" as this March 16, 1934, Act is commonly referred to, requires waterfowl hunters 16 years of age or older to possess a valid Federal hunting stamp. The original $1 stamp was increased to $2 by an August 12, 1949, amendment (63 Stat. 599) which in turn was increased to $3 by Public Law 85-585, approved August 1, 1958 (72 Stat. 486), and further increased by Public Law 92-214, December 22, 1971 (85 Stat. 777) to "a sum not less than $3 and not more than $5 as determined by the Secretary of the Interior" based on land values and needs of the migratory bird resource. The stamp is presently $5. Receipts from the sale of the stamp are set aside in a special Treasury account known as the Migratory Bird Conservation Fund. Funds appropriated under the Wetlands Loan Act (16 U.S.C. 715k-3-715k-5; 75 Stat. 813), as amended are merged with duck stamp receipts in the fund and appropriated to the Secretary for the acquisition of migratory bird refuges under provisions of the Migratory Bird Conservation Act (16 U.S.C. 715 *et seq.*; 45 Stat. 1222), as amended, and since August 1, 1958, Public Law 85-585 (72 Stat. 486), for acquisition of "Waterfowl Production Areas." The Postal Service prints, issues and sells the stamp and is reimbursed for its expenses from money in the fund. Public Law 94-215, approved February 17, 1976 (90 Stat. 189), amended the Act to allow among other things the sale of stamps at places other than post offices and authorized "retail dealers." The 1976 amendment also changed the name of the stamp from "Migratory Bird Hunting Stamp" to "Migratory Bird Hunting and Conservation Stamp." An annual contest is held by the U.S. Fish and Wildlife Service to select the design of the stamp. As of 1976, duck stamp receipts have amounted to approximately $176 million.

Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711; 40 Stat. 755), as amended.—The Act of July 3, 1918, implemented the 1916 Convention between the United States and Great Britain (for Canada) for the Protection of Migratory Birds (39 Stat. 1702) thereby establishing a Federal responsibility for protection of the international migratory bird resource. Amendments June 20, 1936 (49 Stat. 1556), implemented the 1936 Convention between the United States of America and the United Mexican States for the Protection of Migratory Birds and Game Mammals (50 Stat. 1311), as amended, and June 1, 1974, Public Law 93-300 (88 Stat. 190), among other things, implemented the 1973 Convention between the Government of the United States of America and the Government of Japan for the Protection of Migratory Birds and Birds in Danger of Extinction, and their Environment (25 U.S.T. 3329; T.I.A.S. 7990), as amended. As amended by Public Law 86-732, September 8, 1960 (74 Stat. 866), the Act provides for regulations to control taking, selling, transporting and importing migratory birds, their nests, eggs, parts or products, when such items are included in the terms of any treaty, and provides enforcement authority and penalties for violations.

Mitchell Act (16 U.S.C. 755-757; 52 Stat. 345), as amended.—This May 11, 1938, Act as amended by the Act of August 8, 1946 (60 Stat. 932), authorizes the Secretary of the Interior to carry on activities for conservation of fishery resources in the Columbia River Basin (see also Columbia Basin Project Act). Specifically directs establishment of salmon hatcheries, conduct of engineering and biological surveys and experiments, and installation of fish protective devices. Authorizes agreements with State fishery agencies and construction of facilities on State-owned lands. Under this authority, the U.S. Fish and Wildlife Service operates 8 hatcheries and conducts fish husbandry research. Other Federal activities in the basin under this Act are carried out by the Department of Commerce pursuant to Reorganization Plan No. 4 of 1970 (84 Stat. 2090).

National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347; 83 Stat. 852).—Public Law 91-190, approved January 1, 1970, requires all Federal agencies to consult with each other and to employ systematic and interdisciplinary techniques in planning and decisionmaking. It also requires them to include in "every recommendation or report on proposals for legislation or other major Federal actions significantly affecting the quality of the human environment a detailed statement . . . on—(i) the environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short term uses and . . . enhancement of long term productivity and (v) any irreversible and irretrievable commitments of resources . . . involved . . . in the proposed action." Such environmental impact statements are required to be available to the public and other agencies. The Act also established the Council on Environmental Quality.

National Fish Hatchery Acts.—Authority for construction, operation and maintenance of fish hatcheries by the U.S. Fish and Wildlife Service is contained in a variety of specific and general statutes. Many of the older facilities were authorized by appropriation Acts, others as mitigation at water resource development projects and still others by special Acts of Congress. As of September 1976 there were 94 national fish hatcheries under U.S. Fish and Wildlife Service administration, some of which were authorized under the following statutes:

- Bankhead-Jones Farm Tenant Act (7 U.S.C. 1000 *et seq.*; 50 Stat. 522), as amended.—Welaka, Florida (1938)
- Central Valley Project, Sacramento Valley Reclamation Act (64 Stat. 1036).—Tehama-Colusa, California (1967).
- Colorado River Storage Project Act (43 U.S.C. 620-620o; 70 Stat. 105), as amended.—Hotchkiss, Colorado (1967); Jones Hole, Utah (1968).
- Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j; 70 Stat. 1119), as amended.—General authority under which over 10 hatcheries established.
- Fish and Wildlife Coordination Act (16 U.S.C. 661-666c; 48 Stat. 401), as amended.—General authority for many hatcheries at water resource development projects.
- Mitchell Act (16 U.S.C. 755-757; 52 Stat. 345), as amended.—Abernathy, Washington (1957); Eagle Creek, Oregon (1953); Entiat, Washington (1940); Kooskia, Idaho (1970); Leavenworth, Washington (1938); Warm Springs, Oregon (1974); Willard, Washington (1951); Winthrop, Washington (1940).
- National Industrial Recovery Act (48 Stat. 195).—McKinney Lake, North Carolina (1937).
- Palisades Dam and Reservoir Project, Idaho, Reauthorization Act of September 30, 1950 (64 Stat. 1083).—Jackson, Wyoming (1957).
- River and Harbor Act of 1962 (76 Stat. 1173).—Dworshak, Idaho (1969).
- Special Acts: May 21, 1930 (46 Stat. 371).—Omnibus authorization for some 18 fish culture stations (hatcheries); July 31, 1939, and December 13, 1944 (16 U.S.C. 161c-161d; 53 Stat. 1142, 58 Stat. 801).—Creston, Montana (1944); August 18, 1948 (63 Stat. 615).—Millen, Georgia (1950), Pendills Creek, Michigan (1950); July 18, 1950 (16 U.S.C. 760-760-1; 64 Stat. 343).—Frankfort, Kentucky (1952); June 4, 1956 (16 U.S.C. 760-2; 70 Stat. 247).—Miles City, Montana (1957); June 18, 1956 (16 U.S.C. 760-3; 70 Stat. 292).—Pisgah Forest, North Carolina (1957); August 1, 1956 (16 U.S.C. 760-4; 34 Stat. 721, 70 Stat. 897).—Pittsford, Vermont (1909); August 3, 1956 (16 U.S.C. 760-5-760-6; 70 Stat. 1020).—Paint Bank, West Virginia

(1958); August 6, 1956 (16 U.S.C. 760-7-760-8; 70 Stat. 1057).—Bowden, West Virginia (1958); August 25, 1959 (16 U.S.C. 760-9-760-10; 73 Stat. 430).—Allegheny, Pennsylvania (1974); July 5, 1960 (16 U.S.C. 760-11-760-12; 74 Stat. 311).—Orangeburg County, South Carolina (1944).

- Upper Mississippi River Wild Life and Fish Refuge (16 U.S.C. 721-731; 43 Stat. 650), as amended.—Genoa, Wisconsin (1931).

National Fisheries Center and Aquarium Act of 1962 (16 U.S.C. 1051-1058; 76 Stat. 752).—Public Law 87-758, approved October 9, 1962, authorizes the Secretary of the Interior to plan, construct and maintain a National Fisheries Center and Aquarium in the District of Columbia. Establishes an Advisory Board to assist in management decisions, and further authorizes the procurement, operation and maintenance of vessels for the collection of specimens for the Center. Directs the establishment of user fees to liquidate the $30 million authorized for construction of the Center within 30 years and to pay for annual operation and maintenance.

National Flood Insurance Act—See Flood Protection Act of 1973

National Historic Preservation Act of 1966 (16 U.S.C. 470-470b, 470c-470n; 80 Stat. 915), as amended.—Public Law 89-665, approved October 15, 1966, and amended several times, provides for preservation of significant historical features (buildings, objects, etc.) through a grant-in-aid program to States. Establishes a National Register of Historic Places and a program of matching grants under the National Trust for Historic Preservation Act of October 26, 1949 (16 U.S.C. 468-468d; 63 Stat. 927), as amended. Establishes an Advisory Council on Historic Preservation which was made a permanent independent agency by title II of the Act of September 28, 1976, Public Law 94-422 (90 Stat. 1319), which also created a Historic Preservation Fund. Federal agencies are directed to take into account the effects of their actions on a building, etc., included on the National Register. Through the end of 1975, 24 historic sites on national wildlife refuges have been placed on the National Register.

National Hunting and Fishing Day.—Statutes establishing the fourth Saturday in September of the year indicated as National Hunting and Fishing Day include:

- Public Law 93-23, approved April 20, 1973 (87 Stat. 24)—1973.
- Public Law 93-424, approved September 27, 1974 (88 Stat. 1166)—1974.
- Public Law 94-96, approved September 18, 1975 (89 Stat. 478)—1975.

National Trails System Act (16 U.S.C. 1241-1249; 82 Stat. 919) as amended.—Public Law 90-543, approved October 2, 1968, provides for establishment of recreation and scenic trails. With regard to National Recreation Trails, the Secretary of the Interior and Agriculture may establish and designate such trails on lands under their jurisdiction. Designation of National Scenic Trails requires specific Acts of Congress and the 1968 Act designated two and directed study and recommendations to Congress on fourteen others. A 1976 amendment added eight more trails to be studied. As of July 1976, 93 National Recreation Trails had been designated by either the Secretary of the Interior or Agriculture.

National Wild and Scenic Rivers System Acts.—Pursuant to the Wild and Scenic Rivers Act (16 U.S.C. 1271-1287; 82 Stat. 906), as amended, statutes designating rivers which flow either wholly or in part through national wildlife refuges as part of the National Wild and Scenic Rivers System include the following:

- Missouri River, Montana(16 U.S.C. 1274 Note; 90 Stat. 2327).—Public Law 94-486, approved October 12, 1976, designated a 159-mile segment of the river from Ft. Benton to Robinson Bridge as part of the system. About a seven mile segment is within the Charles M. Russell National Wildlife Range.

National Wilderness Preservation System Acts.—Statutes establishing areas in the National Wildlife Refuge System as part of the National Wilderness Preservation System pursuant to the Wilderness Preservation Act of 1964 (16 U.S.C. 1131-1136; 78 Stat. 890) include the following listed in chronological order by date public law approved (unless otherwise indicated, area designated as wilderness has same name as the refuge in which wilderness is located; acreage placed in wilderness given in parentheses following location):

- Public Law 90-532, approved September 28, 1968 (82 Stat. 883): Great Swamp, Morris County, New Jersey (3,750).
- Public Law 91-504, approved October 23, 1970 (84 Stat. 1104): Bering Sea, 2nd District, Alaska (41,113); Bogoslof, 3rd District, Alaska (390); Forrester Island, 1st District, Alaska (2,630); Hazy Islands, 1st District, Alaska (42); Huron Islands, Marquette County, Michigan (147); Island Bay, Charlotte County, Florida (20); Michigan Islands, Alpena and Charlevoix Counties, Michigan (12); Monomoy, Barnstable County, Massachusetts (2,340); Moosehorn (Edmunds and Birch Island Units), Washington County, Maine (2,782), Oregon Island (Oregon Islands NWR), Curry County, Oregon (21); Passage Key, Manatee County, Florida (20); Pelican Island, Indian River County, Florida (3); Saint Lazaria, 1st District, Alaska (62); Salt Creek (Bitter Lake NWR), Chaves County, New Mexico (8,500); Seney, Schoolcraft County, Michigan (25,150); Three Arch Rocks, Tillamook County, Oregon (17); Tuxedni, 3rd District, Alaska (6,402), Washington Islands (Copalis NWR, Quillayute Needles NWR, Flattery Rocks NWR), Grays Harbor, Clallam and Jefferson Counties, Washington (179); Wichita Mountains, Comanche County, Oklahoma (8,900), Wisconsin Islands (Gravel Island NWR, Green Bay NWR), Door County, Wisconsin (29).
- Public Law 92-364, approved August 7, 1972 (86 Stat. 505): Cedar Keys, Levy County, Florida (375).
- Public Law 93-429, approved October 1, 1974 (88 Stat. 1179): Okefenokee, Charlton, Clinch and Ware Counties, Georgia (343,850).
- Public Law 93-550, approved December 26, 1974 (88 Stat. 1744): Farallon, San Francisco County, California (141).
- Public Law 93-632, approved January 2, 1975 (88 Stat. 2153): Blackbeard Island, McIntosh County, Georgia (3,000); Breton, Plaquemines Parish, Louisiana (5,000); Brigantine, Ocean, Atlantic and Burlington Counties, New Jersey (6,603); Bosque del Apache, Socorro County, New Mexico (30,850); Cape Romain,

Charleston County, South Carolina (28,000); Chamisso, 2nd District, Alaska (455); Chase Lake, Stutsman County, North Dakota (4,155); Florida Keys (National Key Deer NWR, Great White Heron NWR, Key West NWR), Monroe County, Florida (4,740); Lostwood, Burke County, North Dakota (5,577); Moosehorn (Baring Unit), Washington County, Maine (4,719); Saint Marks, Jefferson, Taylor and Wakulla Counties, Florida (17,746); West Sister Island, Lucas County, Ohio (85); Wolf Island, McIntosh County, Georgia (5,126).

- Public Law 94-557, approved October 19, 1976 (90 Stat. 2633): Agassiz, Marshall County, Minnesota (4,000); Big Lake, Mississippi County, Arkansas (2,600); Chassahowitzka, Citrus County, Florida (23,360); Crab Orchard, Williamson, Jackson and Union Counties, Illinois (4,050); Fort Niobrara, Cherry County, Nebraska (4,635); J.N. "Ding" Darling, Lee County, Florida (2,825); Lacassine, Cameron Parish, Louisiana (3.300); Lake Woodruff, Lake and Volusia Counties, Florida (1,146); Medicine Lake, Roosevelt and Sheridan Counties, Montana (11,366); Mingo, Wayne and Stoddard Counties, Missouri (8,000); Red Rock Lakes, Beaverhead County, Montana (32,350); San Juan Islands, San Juan and Skagit Counties, Washington (355); Simeonof, 3rd District, Alaska (25,141); Swanquarter, Hyde County, North Carolina (9,000); Tamarac, Becker County, Minnesota (2,138); UL Bend, Phillips County, Montana (20,890).

National Wildlife Refuge Acts.—In addition to specific Acts of Congress, refuges can be established in many ways including public land withdrawal, transfer from other agencies, cooperative agreement with other agencies, donation and by purchase under such authorities as the Fish and Wildlife Act of 1956 (16 U.S.C. 742a-742j; 70 Stat. 1119), as amended; the Migratory Bird Conservation Act (16 U.S.C. 715 *et seq.*; 45 Stat. 1222), as amended; the Fish and Wildlife Coordination Act (16 U.S.C. 661-666c; 48 Stat. 401), as amended; and the Endangered Species Act of 1973 (16 U.S.C. 1531-1543; 87 Stat. 884), as amended. Two primary sources of money for acquisition of refuge lands are: (1) the Migratory Bird Conservation Fund composed of receipts from the sale of "duck stamps" under authority of the Migratory Bird Hunting and Conservation Stamp Act (16 U.S.C. 718-718h; 48 Stat. 452), as amended, and funds appropriated under the Wetlands Loan Act (16 U.S.C. 715k-3-715k-5; 75 Stat. 813), as amended, and (2) appropriations under the Land and Water Conservation Fund Act (16 U.S.C. 460*l*-4 - 460*l*-11; 78 Stat. 897), as amended. As of June 30, 1975, the National Wildlife Refuge System consisted of 378 refuges and ranges comprising some 32.27 million acres and 127 waterfowl production areas comprising about 1.43 million acres. Specific statutes establishing a refuge or directing certain administrative actions related to a refuge include, but are not limited to, the following:

- Back Bay National Wildlife Refuge (64 Stat. 465).—Public Law 81-718, approved August 19, 1950, provided for conveyance of an easement to Commonwealth of Virginia.
- Bear River Migratory Bird Refuge (16 U.S.C. 690-690i; 45 Stat. 448), as amended and supplemented.—Act of April 23, 1928, established refuge in Box Elder County, Utah, and provided administrative direction. Act of June 3, 1966, Public Law 89-441 (80 Stat. 192), authorized conveyance of certain lands other than refuge lands to the State.
- Cheyenne Bottoms Migratory Bird Refuge (16 U.S.C. 691-691d; 46 Stat. 579).—Act of June 12, 1930, directs acquisiton and establishment of a refuge in Kansas or compensation of landowners for damages from flooding (refuge not established).
- Chincoteague National Wildlife Refuge (16 U.S.C. 459f-5(a), (b), 459f-8; 79 Stat. 826), as supplemented.—Public Law 85-57, approved June 17, 1957 (71 Stat. 175), provided for construction of a bridge and road across refuge and other recreational facilities. Public Law 89-195, approved September 21, 1965 established Assateague Island National Seashore and provided in section 6 (16 U.S.C. 469f-5; 79 Stat. 826) for continued administration of Chincoteague as a refuge.
- Crab Orchard National Wildlife Refuge (61 Stat. 770), as supplemented.—Act of August 5, 1947 directs transfer of certain lands in Illinois to the Department of the Interior for classification and development for wildlife, agriculture, recreation, industry and related purposes. Public Law 90-339, approved June 15, 1968 (82 Stat. 177), provides for adjustment of legislative jurisdiction of the United States on the refuge.
- Egmont Key National Wildlife Refuge (16 U.S.C. 668dd Note; 88 Stat. 295).—Public Law 93-341, approved July 10, 1974, directs establishment of the refuge by transfer of certain lands in Florida.
- Great Dismal Swamp National Wildlife Refuge (86 Stat. 793), as supplemented.—Public Law 92-478, approved October 9, 1972, directs a study to determine feasibility and desirability of protecting swamp and canal, and Public Law 93-402, approved August 30, 1974, (88 Stat. 801) directs establishment of refuge consisting of lands granted to the United States by the Nature Conservancy and other lands identified in the study. Administrative direction provided. Authorizes funds for acquisition and development through Fiscal Year 1977.
- Klamath Forest National Wildlife Refuge (25 U.S.C. 564d, 564w-1; 68 Stat. 718), as amended.—The Act of August 13, 1954, as amended by the Act of August 23, 1958 (72 Stat. 816), and the Act of September 9, 1959, Public Law 86-247 (73 Stat. 477), provides for establishment of the refuge in Klamath County, Oregon, and compensation to certain Klamath Indians from "duck stamp" receipts.
- Merritt Island National Wildlife Refuge (16 U.S.C. 459j-8; 88 Stat. 2121).—Public Law 93-626, approved January 3, 1975, established the Canaveral National Seashore, Florida, consisting of some 67,500 acres of private, State and Federal (NASA) lands and insured that the refuge, within the boundary of the seashore, will continue to be administered as part of the National Wildlife Refuge System.
- Minnesota Valley National Wildlife Refuge (16 U.S.C. 668kk-668ss; 90 Stat. 1993).—Public Law 94-466, approved October 8, 1976, directs establishment of an 9,500 acre refuge and an 8,000 acre recreation area along lower stretches of the Minnesota River between Carver and Ft. Snelling. Directs development of a comprehensive management plan within three years (October 1979) and provides other specific guidance for administration including assurance of continued maintenance of the river for navigation. Appropriations are authorized through September 30, 1983, for acquisition and through September 30, 1986, for development.
- National Bison Range (16 U.S.C. 671; 35 Stat. 267), as

amended and supplemented.—The Act of May 23, 1908, directed the establishment of a range from unallotted lands within the Flathead Indian Reservation, Montana, for bison presented to the United States by the American Bison Society. An amendment, March 4, 1909 (35 Stat. 1051), directed enlargement of the range. The Act of August 12, 1958 (72 Stat. 561), authorized the acquisition and establishment of a small bison display pasture in Lake County, Montana.

- National Elk Refuge (16 U.S.C. 673-673b; 37 Stat. 293), as amended and supplemented.—The Act of August 10, 1912, and the Act of March 4, 1913 (37 Stat. 847), authorized appropriations for the establishment and maintenance of a winter elk refuge in Teton County, Wyoming. An Act of February 25, 1927 (44 Stat. 1246), authorized acceptance of a gift of certain lands from the Izaak Walton League for addition to the refuge. An Act of September 14, 1950 (64 Stat. 849), among other things described certain lands to be administered as part of the refuge in what was then the Jackson Hole National Monument.
- National Key Deer Refuge (16 U.S.C. 696-696b; 71 Stat. 412), as amended.—Public Law 85-164, approved August 22, 1957, directs establishment of the refuge in Monroe County, Florida, for protection of Key deer. Section 10(a) and (b) of Public Law 89-669, approved October 15, 1966 (80 Stat. 930), amended the acquisition authority and authorization.
- Okefenokee National Wildlife Refuge (70 Stat. 668).—Public Law 84-810, approved July 26, 1956, directs the Secretary to take certain actions including construction of roads and ditches to protect the refuge and adjacent forests in Florida and Georgia from wildfires.
- Parker River National Wildlife Refuge (62 Stat. 293).—This June 3, 1948, Act directs the Secretary to dispose of portions of this 1942 refuge located in Essex County, Massachusetts, and to take steps to maintain the edible clams found within the remaining portions of the refuge and adjacent lands.
- Pea Island National Wildlife Refuge (16 U.S.C. 459-459a-9; 50 Stat. 669), as amended.—The Act of August 17, 1937, as amended by the Act of June 29, 1940 (54 Stat. 702), established the Cape Hatteras National Seashore, and in section 5 (16 U.S.C. 459a-3; 50 Stat. 670) insured continued administration of the refuge within the boundary of the seashore.
- San Francisco Bay National Wildlife Refuge (16 U.S.C. 668dd Note, 668ff-668jj; 86 Stat. 399).—Public Law 92-330, approved June 30, 1972, provides for the establishment of this California refuge consisting of approximately 21,662 acres to provide protection for endangered species, wildlife-oriented recreation and habitat for migratory waterfowl. Authorizes funds for acquisition and development through Fiscal Year 1977.
- Seal Beach National Wildlife Refuge (16 U.S.C. 668dd Note; 86 Stat. 633).—Public Law 92-408, approved August 29, 1972, establishes this refuge on the U.S. Naval Weapons Station, Seal Beach, Califorina. Should property become excess to needs of the Department of Defense, it is to be transferred to the Department of the Interior. Authorizes appropriations for operation and development through Fiscal Year 1977.
- Skagit National Wildlife Refuge (16 U.S.C. 666d-666e; 63 Stat. 708).—The Act of October 6, 1949, authorized exchange of refuge lands for other lands in the State of Washington (this refuge abolished October 5, 1959, by transfer to the State in exchange for State lands in the Columbia National Wildlife Refuge).
- Sullys Hill National Game Preserve (16 U.S.C. 674-674d; 38 Stat. 434), as supplemented.—Agriculture Appropriations Act of June 30, 1914, for Fiscal Year 1915 provided an appropriation for improvement of game lands in Sullys Hill National Park, Benson County, North Dakota. The Act of March 3, 1931 (46 Stat. 1509), changed the park to a refuge.
- Talcot National Wildlife Refuge (65 Stat. 602).—The Act of October 23, 1951, authorized exchange of refuge lands for other lands in the State of Minnesota (this refuge abolished August 10, 1957, by transfer to the State in exchange for State lands in Rice Lake and Tamarac National Wildlife Refuges).
- Tinicum National Environmental Center (16 U.S.C. 668dd Note; 86 Stat. 391), as amended.—Public Law 92-326, approved June 30, 1972, directs protection of Tinicum Marsh by establishment of a 1,200 acre refuge within city limits of Philadelphia, Pennsylvania. As amended by Public Law 94-548, approved October 18, 1976 (90 Stat. 2528), the 45-acre Folcroft Landfill was added to the refuge and the authorization for acquisition and development was increased and extended.
- Tule Lake-Klamath Refuges (16 U.S.C. 695k-695r; 78 Stat. 850).—The Act of September 2, 1964, Public Law 88-567, stabilized the ownership of lands within the Klamath Federal Reclamation Project, California-Oregon, authorized by the Act of February 9, 1905 (43 U.S.C. 601-612; 33 Stat. 714), as amended, and provided for administration and management of the project and the Tule Lake, Upper Klamath, Lower Klamath and Clear Lake National Wildlife Refuges. The Act dedicated lands within the Executive order boundaries of the refuges to wildlife conservation and provided for their administration for the major purpose of waterfowl management with full consideration of optimum agricultural use consistent therewith; authorized addition of certain public lands; continued the leasing of agricultural lands; and provided for distribution of net-lease revenues among local counties and the Reclamation Fund.
- Upper Mississippi River Wild Life and Fish Refuge (16 U.S.C. 721-731; 43 Stat. 650), as amended and supplemented.—The Act of June 7, 1924, authorized acquisition and development of the refuge; provided administrative direction including assurance that refuge operations would not interfere with maintenance of navigation on the river or other works of improvement. Amendments March 4, 1925 (43 Stat. 1354), and May 12, 1928 (45 Stat. 502), provided additional acquisition authority and appropriations. The Act of April 10, 1928 (45 Stat. 420), authorized acceptance of a gift of land in Iowa as part of the refuge. The Act of June 13, 1944 (54 Stat. 274), provided for additions to the refuge of lands in Minnesota and transfer of funds to certain Sioux Indian bands to extinguish their rights. The Act of May 27, 1961 (75 Stat. 88), added certain lands in the refuge to the Effigy Mounds National Monument, Iowa.
- Wichita Mountains Wildlife Refuge (16 U.S.C. 684-687; 33 Stat. 614), as amended and supplemented.—Acts of January 24, 1905, and June 29, 1906 (34 Stat. 607), authorized setting aside certain lands in Wichita and Grand Canyon National Forests for wildlife and provided administrative direction (refuge established by Proclamation 563, June 2, 1905 (34 Stat. 3062) and renamed by Executive Order 7116, June 26, 1935, and

Proclamation 2211, November 27, 1936). Act of February 26, 1919 (40 Stat. 1178), directed that certain lands in the Grand Canyon National Forest, other than the game preserve, be added to the Grand Canyon National Park.

- Wyandotte National Wildlife Refuge (16 U.S.C. 668dd Note, 697-697a; 75 Stat. 243).—Public Law 87-119, approved August 3, 1961, established refuge consisting of certain lands on the Detroit River, Michigan. A provision of an earlier Act, September 13, 1960 (74 Stat. 904), authorized the Secretary to petition the City of Wyandotte for annexation of certain lands and provided that it would not prevent establishment of a refuge.

National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-668ee; 80 Stat. 927), as amended.—This Act, (derived from sections 4 and 5 of Public Law 89-669 of October 15, 1966) constitutes an "Organic Act" for the National Wildlife Refuge System by providing guidelines and directives for administration and management of all areas in the system including "wildlife refuges, areas for the protection and conservation of fish and wildlife that are threatened with extinction, wildlife ranges, game ranges, wildlife management areas, or waterfowl production areas." The Secretary is authorized to permit by regulations the use of any area within the system provided "such uses are compatible with the major purposes for which such areas were established." Not more than 40 percent of an area acquired as a migratory bird sanctuary can be opened at any one time to hunting of such wildlife. Contracts may be entered into for public accommodations and donations of funds may be accepted for land acquisition and management. An amendment July 18, 1968, Public Law 90-404 (82 Stat. 359), provides that proceeds from disposal of lands in the system acquired with "duck stamp" funds or by donation are to be paid into the Migratory Bird Conservation Fund and that the Migratory Bird Conservation Commission must be consulted before disposal of any such acquired land. A December 3, 1974, amendment, entitled National Wildlife Refuge System Administration Act Amendments of 1974, Public Law 93-509 (88 Stat. 1603), requires payment of the fair market value of rights-of-way or other interests granted, and the proceeds deposited in the Migratory Bird Conservation Fund and made available for land acquisition. Public Law 94-215, approved February 17, 1976 (90 Stat. 190), clarified that acquired lands or interests therein can be exchanged for acquired or public lands. An amendment February 27, 1976, Public Law 94-223 (90 Stat. 199), commonly referred to as the "Game Range Act," directs that all areas in the system on or after January 1, 1975, "shall be administered by the Secretary through the United States Fish and Wildlife Service" and cannot be transferred or disposed of unless otherwise directed by Acts of Congress. Exceptions are provided for areas administered as part of the system pursuant to cooperative agreements and for transfer or disposal and exchange of acquired lands.

Nature Protection and Wildlife Preservation in the Western Hemisphere—See Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere

Northwest Atlantic Fisheries Act of 1950 (16 U.S.C. 981-991; 64 Stat. 1067), as amended.—As amended several times, this Act implements the International Convention for the Northwest Atlantic Fisheries (1 U.S.T. 477; T.I.A.S. 2089) of July 3, 1950. Procedures are established for appointment and other activities of the International Commission for the Northwest Atlantic Fisheries and an advisory committee. Administration and enforcement of the Convention is vested in the Department of Commerce by this legislation.

Northwest Atlantic Fisheries Convention—See International Convention for the Northwest Atlantic Fisheries (ICNAF)

Ocean Dumping - See Marine Protection, Research and Sanctuaries Act of 1972

Pan American Convention on Nature Protection and Wildlife Preservation - See Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere

Pittman-Robertson Act - See Federal Aid in Wildlife Restoration Act

Polar Bear Convention - See Agreement on the Conservation of Polar Bears

Predatory Animal Control - See Animal Damage Control Act of March 2, 1931

Privacy Act of 1974 (5 U.S.C. 552a; 88 Stat. 1896).—In order to promote greater governmental respect for the privacy of citizens, this December 31, 1974, Act, Public Law 93-579, requires Federal agencies to adopt minimum standards for the collection and processing of personal information, and to publish detailed descriptions of these procedures. The Act also establishes a Privacy Commission to oversee the agencies implementation of the Acts safeguards.

Ramsar Convention on Wetlands of International Importance—See Convention on Wetlands of International Importance Especially as Waterfowl Habitat

Recreation Coordination and Development Act of May 28, 1963 (16 U.S.C. 460*l*-460*l*-3; 77 Stat. 49).—Public Law 88-29 declares a Congressional policy that "present and future generations be assured adequate outdoor recreation resources" and that "all levels of government and private interests . . . take prompt and coordinated action . . . to conserve, develop, and utilize such [their] resources for the benefit and enjoyment of the American people." The Secretary of the Interior is directed to inventory, evaluate and classify outdoor recreation facilities, and formulate and maintain a "comprehensive nationwide outdoor recreation plan."

Refuge Recreation Act (16 U.S.C. 460k-460k-4; 76 Stat. 653), as amended.—Public Law 87-714 of September 28, 1962, as amended by Public Law 89-669, October 15, 1966 (80 Stat. 930), and Public Law 92-534, October 23, 1972 (86 Stat. 1063), authorizes the Secretary of the Interior to administer refuges, hatcheries and other conservation areas for recreational use, when such uses do not interfere with the area's primary purpose. Provides for public use fees and permits, and penalties for violation of regulations. Authorizes the acceptance of donations of funds and real and personal property for purposes of the Act. Section 2 amended December 28, 1973, by section 13(d) of the Endangered Species Act of 1973 (87 Stat. 902) to authorize acquisition of lands and interests suitable for: (1) fish and wildlife-oriented recreation; (2) protection of natural resources; (3) conservation of endangered or threatened species; or (4) carrying out two or more of the above. Such lands must be adjacent to or within the conservation area. Acquisition cannot be accomplished using "duck stamp" receipts. However, funds for acquisition are available pursuant to section 7(a) of the Land and Water Conservation Fund Act, as amended September 28, 1976, by Public Law 94-422 (16 U.S.C. 460*l*-9; 90 Stat. 1318).

Refuge Revenue Sharing Act (16 U.S.C. 715s; 49 Stat. 383), as amended.—Section 401 of the Act of June 15, 1935, established the procedure for making certain payments to counties from revenues derived from the sale of products from refuges located in the county. Major revisions were made August 30, 1964, by Public Law 88-523 (78 Stat. 701) requiring that all revenues received from refuge products such as animals, timber and minerals or from leases or other privileges be deposited in a special Treasury account and net receipts distributed to counties for public schools and roads. For lands acquired in fee the county receives either three-fourths of one percent of the cost of the land adjusted every five years to represent current value or 25 percent of the net receipts collected from the area, whichever is greater. For public lands in an area of the system the county receives an amount equal to 25 percent of net receipts. An amendment December 3, 1974, Public Law 93-509 (88 Stat. 1603), requires that moneys remaining in the fund after payments be transferred to the Migratory Bird Conservation Fund for land acquisition under provisions of the Migratory Bird Conservation Act (16 U.S.C. 715 *et seq.*; 45 Stat. 1222), as amended, except such funds that had previously been available for management of the system and for enforcement under the Migratory Bird Treaty Act (16 U.S.C. 703-711; 40 Stat. 755), as amended, shall not be diminished.

Refuge Trespass Act (18 U.S.C. 41; 62 Stat. 686).—Section 41 of the Criminal Code, title 18, is frequently referred to as the Refuge Trespass Act of June 25, 1948, which consolidated penalty provisions of various Acts from January 24, 1905 (16 U.S.C. 684-687; 33 Stat. 614), through March 10, 1934 (16 U.S.C. 694-694b; 48 Stat. 400), and restated the intent of Congress to protect all wildlife within Federal sanctuaries, refuges, fish hatcheries and breeding grounds. The Act provides that anyone, except in compliance with rules and regulations promulgated by authority of law, who hunts, traps or willfully disturbs any wildlife on such areas, or willfully injures, molests or destroys any property of the United States on such lands or waters, shall be fined, imprisoned, or both.

Research Grants Act of September 6, 1958 (42 U.S.C. 1891-1893; 72 Stat. 1793).—Authorizes heads of Federal agencies to enter into contracts for basic scientific research at nonprofit institutions of higher education or organizations whose purpose is primarily to conduct scientific research. Title to equipment purchased with such grant or contract funds may be vested in such organizations or institutions. An annual report to appropriate House and Senate committees by June 30 of each year required of agencies exercising this authority.

Rivers and Harbors Act of 1899 (33 U.S.C. 401 *et seq.*; 30 Stat. 1151), as amended and supplemented.—The Act of March 3, 1899, as amended and supplemented, among other things makes it unlawful for anyone to conduct any work or activity in navigable waters of the United States without a Federal permit. Under section 10 of the Act (33 U.S.C. 403; 30 Stat. 1151), dikes, dams and similar obstructions to navigation require the consent of Congress unless the navigable portion of the involved water body lies wholly in one State in which case structure may be built under authority of the State with approval of the Chief of Engineers and the Secretary of the Army. The Secretary of the Army is authorized to issue permits to construct piers, jetties and similar structures, or to dredge and fill in navigable waters. Authority of the Corps of Engineers to issue permits for the discharge of refuse into or affecting navigable waters under section 13 of the 1899 Act (33 U.S.C. 407; 30 Stat. 1152) was modified by title IV of Public Law 92-500, October 18, 1972, the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. 1341-1345; 86 Stat. 877), as amended, establishing National Pollutant Discharge Elimination System Permits. The Fish and Wildlife Coordination Act (16 U.S.C. 661-666c; 48 Stat. 401), as amended, provides authority for the U.S. Fish and Wildlife Service to review and comment as to the effects on fish and wildlife of the works and activities proposed to be undertaken or permitted by the Corps of Engineers.

Shooting from Aircraft Act - See Fish and Wildlife Act of 1956

Sikes Act (16 U.S.C. 670a-670o; 74 Stat. 1052), as amended.—Public Law 86-797, approved September 15, 1960, provides for cooperation by the Department of the Interior and Defense with State agencies in planning, development and maintenance of fish and wildlife resources on military reservations throughout the United States. An amendment August 8, 1968, Public Law 90-465 (82 Stat. 661), authorizes a program for development of outdoor recreation facilities. Amended October 18, 1974, Public Law 93-452 (88 Stat. 1369), by authorizing appropriations to Defense and Interior through June 30, 1978, for conservation and rehabilitation programs on military lands. Authorizes conservation and rehabilitation programs on AEC (now ERDA), NASA, Forest Service and BLM lands. Such programs to be carried out in cooperation with the States by the Secretary of the Interior and on Forest Service lands by the Secretary of Agriculture. Authorizes appropriations through June 30, 1978, to Interior and Agriculture. A public land management area stamp may be sold in order to hunt, fish or trap on lands subject to a conservation and rehabilitation program.

Small Reclamation Projects Act of 1956 (43 U.S.C. 422a-422k; 70 Stat. 1044), as amended.—The Act of August 6, 1956, as amended by Public Law 89-553, September 2, 1966 (80 Stat. 376), has as its purpose to encourage State and local participation in development of reclamation projects and to provide Federal assistance. The cost of means and measures to prevent loss of and damage to fish and wildlife resource shall be considered a project cost. Projects under this authority are subject to the review requirements of the Fish and Wildlife Coordination Act (16 U.S.C. 661-666c; 48 Stat. 401), as amended.

Small Watershed Projects Act—See Watershed Protection and Flood Prevention Act

Soil Conservation and Domestic Allotment Act of 1935 (16 U.S.C. 590a-590q-2; 49 Stat. 163), as amended. —Provides programs for the prevention of soil erosion such as farm pond construction, and establishes the Soil Conservation Service of the Department of Agriculture. An amendment of October 2, 1962, Public Law 87-732, added section 16A (16 U.S.C. 590p-1; 76 Stat. 696) authorizing the Secretary of the Interior to review applications to the Department of Agriculture for assistance in draining farm wetlands in Minnesota, South Dakota and North Dakota. Drainage assistance is prohibited if (1) the Secretary finds a wetland important to wildlife preservation, (2) he or a State agency offers within one year to lease or purchase such wetland for waterfowl purposes, and (3) deal is consummated within five years.

Soviet Union-United States Environmental Agreement—See Agreement on Cooperation in the Field of Environmental Protection

Soviet Union-United States Migratory Bird Convention—See Convention between the United States of America and the Union of Soviet Socialist Republics Concerning the Conservation of Migratory Birds and their Environment

Surplus Grain for Wildlife Act of August 17, 1961 (7 U.S.C. 447-449; 75 Stat. 389).—Public Law 87-152 authorizes the Secretary of the Interior to requisition surplus grain owned by the Commodity Credit Corporation to feed migratory birds threatened with starvation. Authorizes use of such grain by State agencies for feeding resident wildlife upon a finding by the Secretary of an emergency. Funds are authorized to be appropriated for reimbursement.

Tariff Act of 1930 (19 U.S.C. 1202-1527; 46 Stat. 741), as amended.—Among other things, imposes import duties on certain fish and wildlife, including but not limited to wild birds, bird feathers and skins; prohibits importation of wild mammals or birds or parts or products thereof in violation of laws or regulations of the country from which exported. Enforced by the U.S. Customs Service in cooperation with the U.S. Fish and Wildlife Service.

Toxic Substance Control Act (15 U.S.C. 2601-2629; 90 Stat. 2003).—Public Law 94-469, approved October 11, 1976, establishes under the administration of the Environmental Protection Agency a program for testing and regulating commerce in certain chemical substances determined to be hazardous. Provides consultation and coordination with other Federal agencies.

Transfer of Certain Real Property for Wildlife Conservation Purposes Act of May 19, 1948 (16 U.S.C. 667b-667d; 62 Stat. 240), as amended.—As amended by the Act of June 30, 1949 (63 Stat. 381), the Act of September 26, 1972, and by Public Law 92-432 (86 Stat. 723), this statute provides that upon a determination by the Administrator of the General Services Administration, real property no longer needed by a Federal agency can be transferred without reimbursement to the Secretary of the Interior if the land has particular value for migratory birds or to a State agency for wildlife conservation.

Treaty between the United States and Great Britain Relating to Boundary Waters between the United States and Canada (36 Stat. 2448; T.S. 548).—This May 13, 1910, treaty was signed in Washington, D.C., January 11, 1909, with ratification advised by the Senate March 3, 1909, and the President ratified, April 1, 1910. Great Britain ratified March 31, 1910; ratification documents exchanged May 5, 1910. The purpose of this treaty was to prevent disputes regarding the use of boundary waters and settle all questions pending or that may arise in the future between the United States and Canada involving the rights, obligations and interests of both nations along their common frontier.

Trespass on Certain Federal Lands—See Refuge Trespass Act

Tule Elk Preservation Act (16 U.S.C. 673d; 90 Stat. 1189).—Public Law 94-389, approved August 14, 1976, directs a Federal/State cooperative program for preservation and enhancement of Tule elk in California. The Secretary of the Interior is directed to make an annual report to Congress in March of each year on activities carried out under the Act.

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. 1415, 2473, 3307, 4601, 4602, 4621-4638, 4651-4655, 49 U.S.C. 1606; 84 Stat. 1894), as amended.—Public Law 91-646, approved January 2, 1971, as amended, among other things provides for uniform and equitable treatment of persons displaced from their homes, businesses or farms by Federal or Federally assisted programs and establishes uniform and equitable land acquisition policies for such programs.

Water Bank Act (16 U.S.C. 1301-1311; 84 Stat. 1468).—Public Law 91-559, approved December 19, 1970, authorizes the Secretary of Agriculture, after coordination with the Secretary of the Interior, to enter into 10 year contracts with landowners to preserve wetlands and retire adjoining agricultural lands. An annual payment may be made to participating owners, and the costs of conservation measures may be shared. Total annual payments to owners may not exceed $10 million in any one year.

Water Resources Planning Act (42 U.S.C. 1962-1962a-3; 79 Stat. 244), as amended.—This July 22, 1965, Act, Public Law 89-80, established the Water Resources Council composed of representatives of various Federal agencies including the Department of the Interior and delegated to it the responsibility for establishing the "Principles and Standards and Procedures for Federal Participation in Water and Related Land Resource Planning and Development." Among other things the Act authorized establishment of State-Federal River Basin Commissions in which the Department of the Interior participates.

Waterfowl Depredations Prevention Act (7 U.S.C. 442-445; 70 Stat. 492), as amended.—The Act of July 3, 1956, as amended by Public Law 86-133, August 4, 1959 (73 Stat. 279), authorizes the Secretary of the Interior to use surplus grain owned by Commodity Credit Corporation in feeding waterfowl to prevent damage to farmers' crops. Such grain may be made available to Federal, State or local governments or private organizations or individuals. Appropriations are authorized to reimburse the CCC for packaging and transporting such grain.

Watershed Protection and Flood Prevention Act (16 U.S.C. 1001-1009; 33 U.S.C. 701b; 68 Stat. 666), as amended.—The Act of August 4, 1954, as amended, also referred to as the Small Watershed Projects Act, declares a policy of assisting State and local organizations in preventing erosion, floodwater and sediment damages in watersheds and to further "the conservation, development, utilization, and disposal of water, and the conservation and utilization of land." Authorizes the Secretary of Agriculture to assist local organizations in preparing and carrying out certain works of improvement. Section 12 of the Act, as added by Public Law 85-624, August 12, 1958 (16 U.S.C. 1008; 72 Stat. 567), directs that the Secretary of the Interior be notified of approval of assistance so that he "may make surveys and investigations" and recommend measures for "conservation and development of wildlife resource." However, inclusion of such measures in the project are discretionary with the local organization and the Secretary of Agriculture. The cost of such conservation surveys and reports must be borne by the Secretary of the Interior.

Wetlands Loan Act (16 U.S.C. 715k-3 - 715k-5; 75 Stat. 813), as amended.—Public Law 87-383, approved October 4, 1961, provided a means of accelerating the acquisition of migratory waterfowl habitat. Amended December 15, 1969, Public Law 90-205 (81 Stat. 612), and further amended February 18, 1976, Public Law 94-215 (90 Stat. 189) to increase the amount of funds authorized to be appropriated from $105 million to $200 million and extend the loan for seven years, from June 30, 1976, to September 30, 1983. Advances are to be repaid to the Treasury using "duck stamp" receipts upon appropriation of all funds authorized or beginning in fiscal year 1984 whichever occurs first. Funds appropriated are merged with "duck stamp" receipts in the Migratory Bird Conservation Fund established by the Migratory Bird Hunting and Conservation Stamp Act (16 U.S.C. 718-718h; 48 Stat. 452), as amended, and used for acquisition of migratory bird refuges and waterfowl production areas under provisions of the Migratory Bird Conservation Act (16 U.S.C. 715 *et seq.*; 45 Stat. 1222), as amended. As of fiscal year 1976, approximately $93.4 million had been appropriated under this authority.

Wild and Scenic Rivers Act (16 U.S.C. 1271-1287; 82 Stat. 906), as amended.—Public Law 90-542, approved October 2, 1968, establishes a National Wild and Scenic Rivers System, designates eight initial components of that system and prescribes the methods and standards through which additional rivers, including 27 listed as potential components, may be identified and added to the system. Authorizes the Secretary of the Interior and the Secretary of Agriculture to study areas and submit proposals to the President and the Congress for addition to the system for administration wholly or partially by an agency of the Federal Government or by State governments. Describes procedures and limitations for control of lands in Federally administered components of the system and for dealing with disposition of lands and minerals under Federal ownership. Provides for classification of a river as wild, scenic or recreational. Permits hunting and fishing in components of the system under applicable Federal and State laws. For a listing or rivers designated for inclusion in the system which are either wholly or partially within the boundary of a unit of the National Wildlife Refuge System, see entry in this leaflet under National Wild and Scenic Rivers System Acts.

Wild Horses and Burros Act (16 U.S.C. 1331-1340; 85 Stat. 649), as amended.—Public Law 92-195, approved December 15, 1971, and amended, provides for protection of wild free-roaming horses and burros. Directs the Bureau of Land Management of the Department of the Interior and Forest Service of the Department of Agriculture to manage such animals on public lands under their jurisdiction.

Wilderness Act of 1964 (16 U.S.C. 1131-1136; 78 Stat. 890).—Public Law 88-577, approved September 3, 1964, directs the Secretary of the Interior, within 10 years, to review every roadless area of 5,000 or more acres and every roadless island (regardless of size) within national wildlife refuges and national parks and to recommend to the President the suitability of each such area or island for inclusion in the National Wilderness Preservation System by later special Acts of Congress. The Secretary of Agriculture is directed to study and recommend suitable areas in the National Forest System. Provides criteria for determining suitability and contains provisions related to activities that can be undertaken on a designated area. Authorizes the acceptance of gifts, bequests and contributions in furtherance of the purposes of the Act and requires an annual report at the opening of each session of Congress on the status of the wilderness system. Under authority of this Act over 15 million acres of land and water in the National Wildlife Refuge System were reviewed. Some 7 million acres in 86 units were found suitable for designation. As of December 1976 over 700,000 acres in 52 refuge units have been established as part of the National Wilderness Preservation System by special Acts of Congress. For areas designated, see entry in this leaflet under National Wildnerness Preservation System Acts.

Youth Conservation Corps Act (16 U.S.C. 1701-1706; 84 Stat. 794), as amended.—Public Law 91-378, approved August 13, 1970, as amended, directs establishment and administration of the YCC program by the Secretary of the Interior and Agriculture on parks, forests and other public lands, including refuges. There were 28 such camps on refuge lands during the summer of 1974.

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[1] Act of February 9, 1871 (16 Stat. 593) created an independent Commissioner of Fish and Fisheries to investigate the decline in food fish and to stock such fish. Functions reconstituted in a Bureau of Fisheries, Department of Commerce by Act of February 14, 1903, (32 Stat. 825). Act of March 3, 1885 (23 Stat. 353), provides first reference to an Entomology Division in the Department of Agriculture for investigations related to the interrelationships of birds and agriculture. Functions increased and name changed, June 30, 1886 (24 Stat. 100), and April 25, 1896 (28 Stat. 99), first to Division of Ornithology and Mammalogy and then to Division of Biological Survey. Reorganization Plan No. II, July 1, 1939 (53 Stat. 1433), transferred Bureau of Biological Survey and Bureau of Fisheries to the Department of the Interior. Reorganization Plan No. III, June 30, 1940 (54 Stat. 1232), consolidated the two bureaus into a Fish and Wildlife Service in Interior under a Commissioner of Fish and Wildlife.

CHAPTER 4

APPENDIX A

Hydrographic Profiles along a Transect from Boothbay Harbor, Maine, (region 2) to 20 Miles at Sea

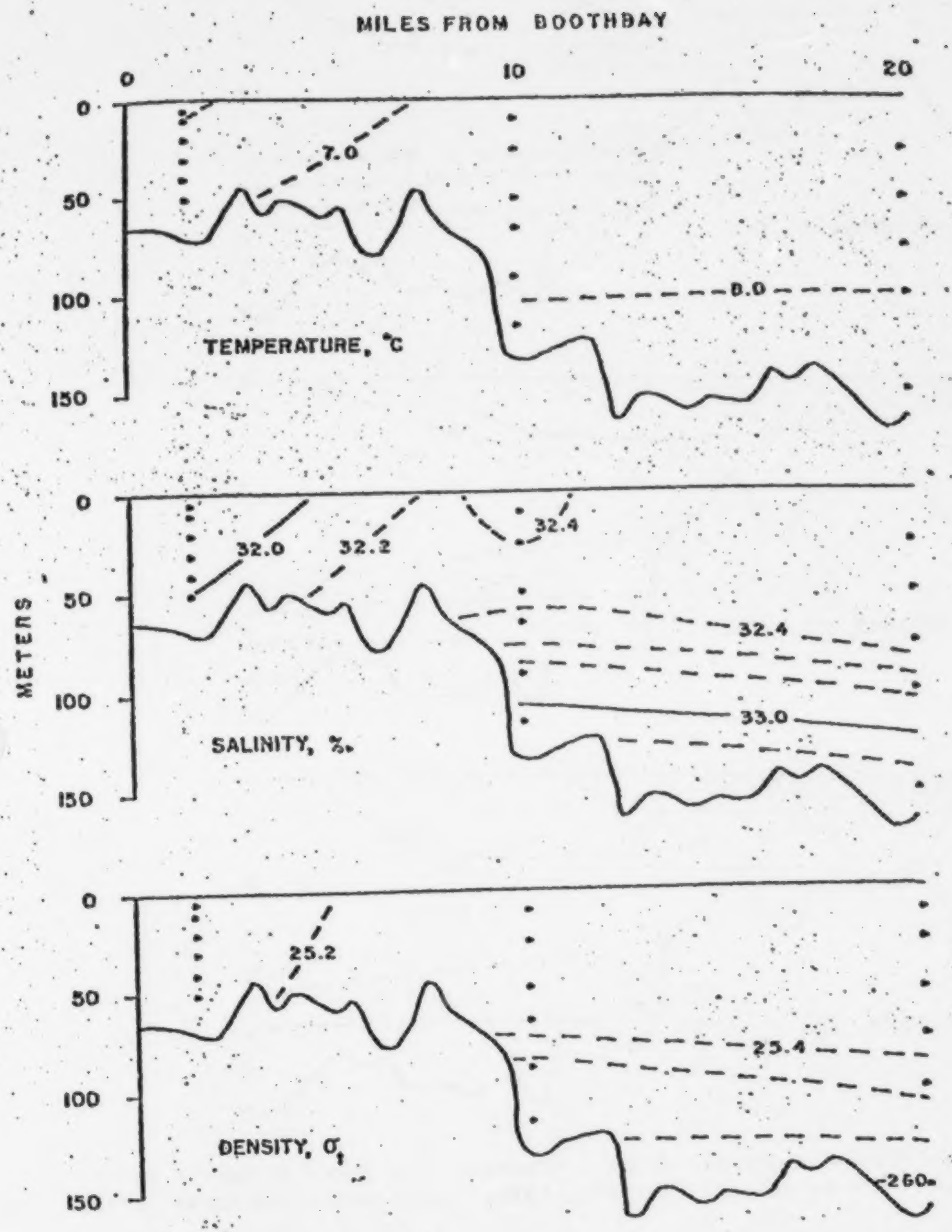

Figure A1. Hydrographic profile along a transect from Boothbay Harbor to 20 miles at sea, 17 December, 1969. (Apollonio and Applin 1972; appendix sources are included in the list of references at the end of each chapter.)

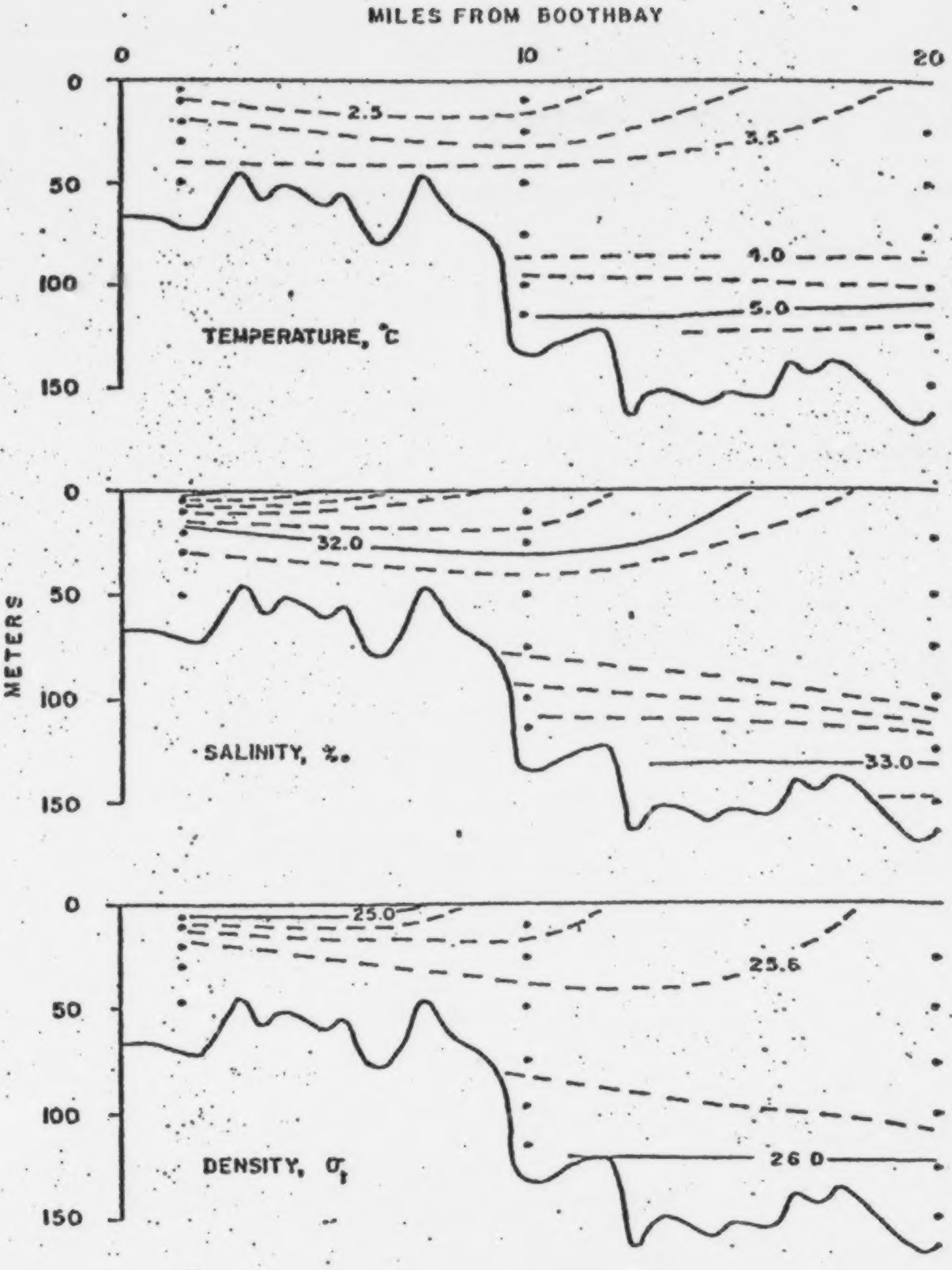

Figure A2. Hydrographic profile along a transect from Boothbay Harbor to 20 miles at sea, 25 February, 1970. (Appollonio and Applin 1972).

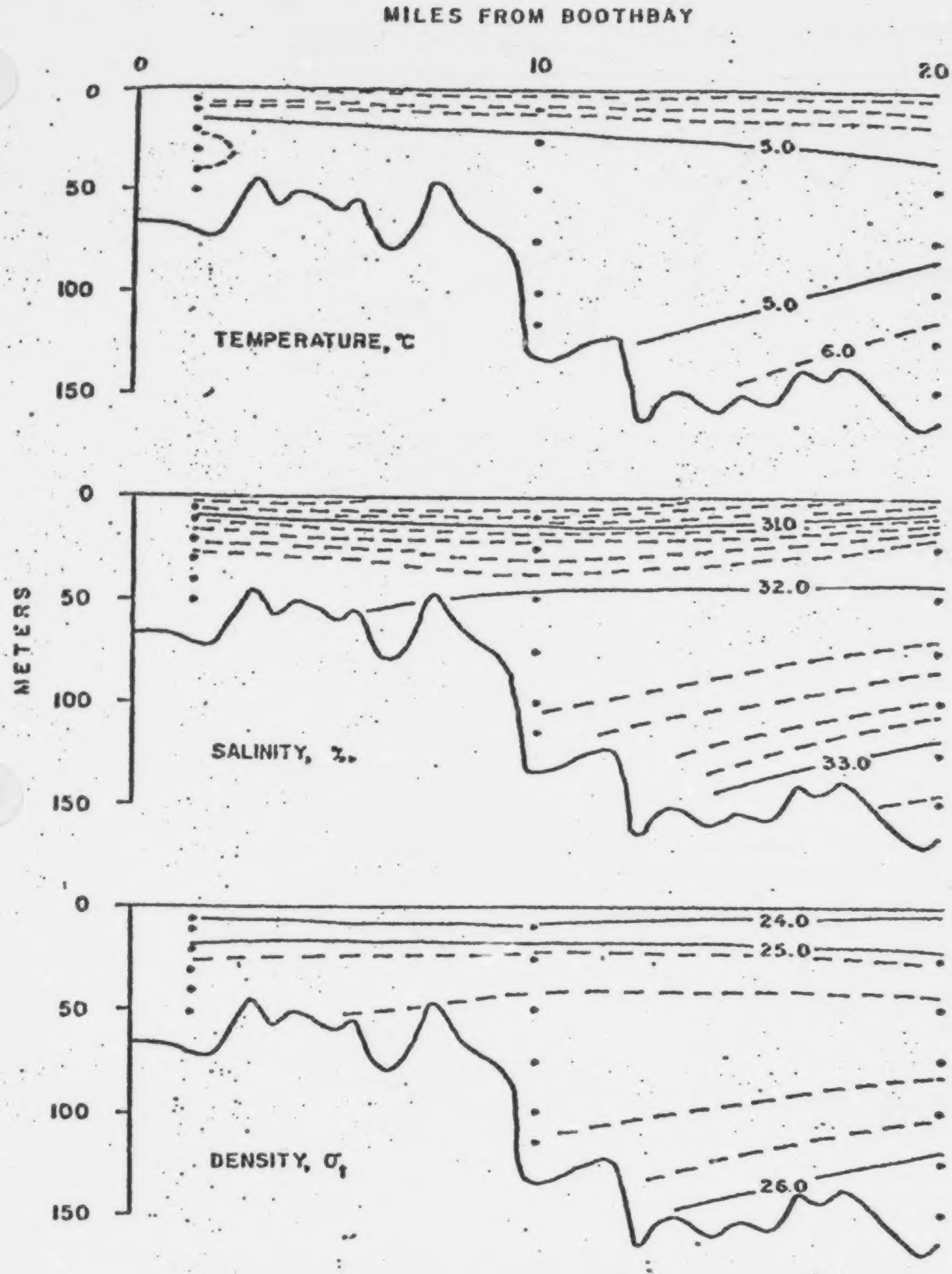

Figure A3. Hydrographic profile along a transect from Boothbay Harbor to 20 miles at sea, 5 May, 1970. (Apollonio and Applin 1972).

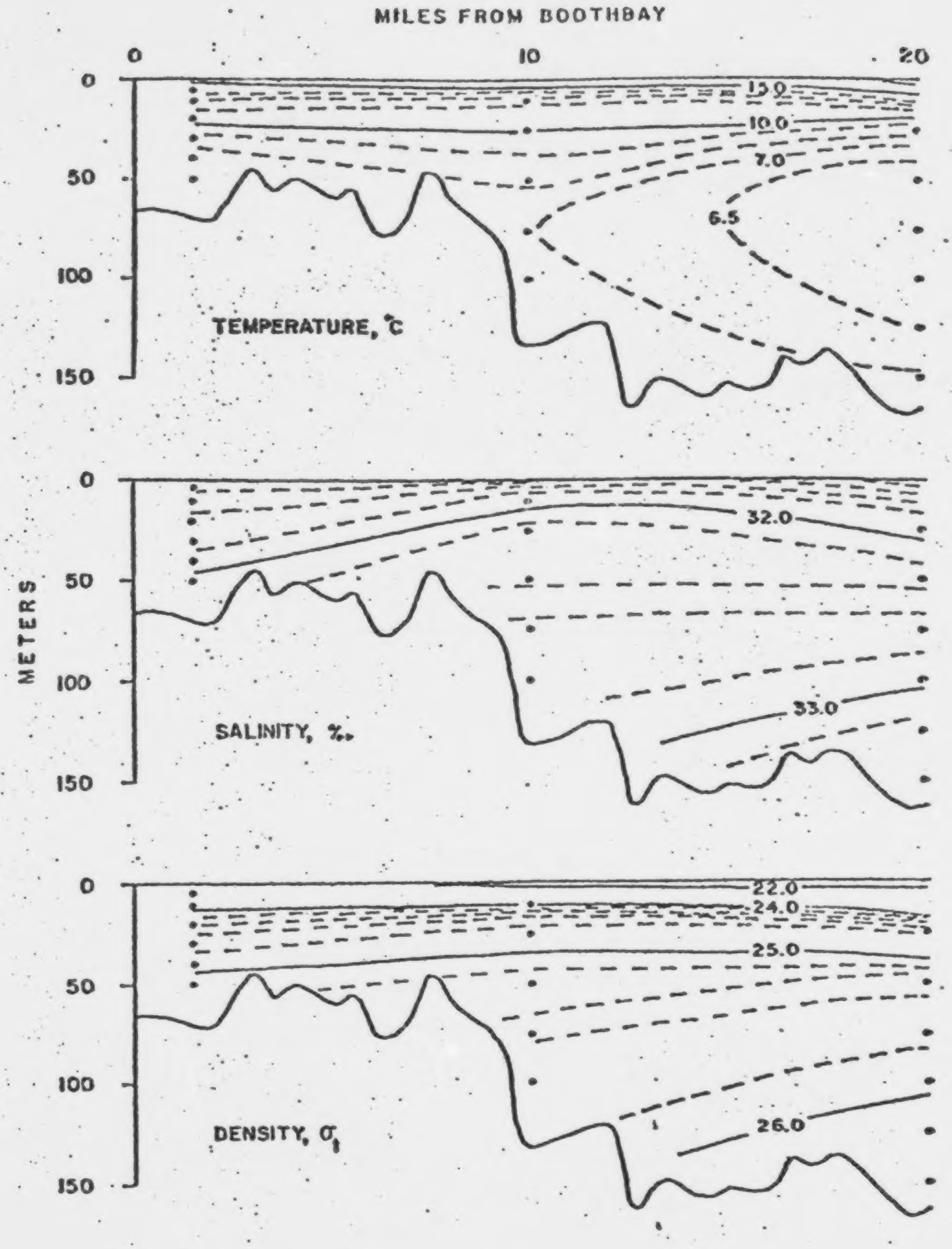

Figure A4. Hydrographic profile along a transect from Boothbay Harbor to 20 miles at sea, 4 August, 1970. (Apollonio and Applin 1972).

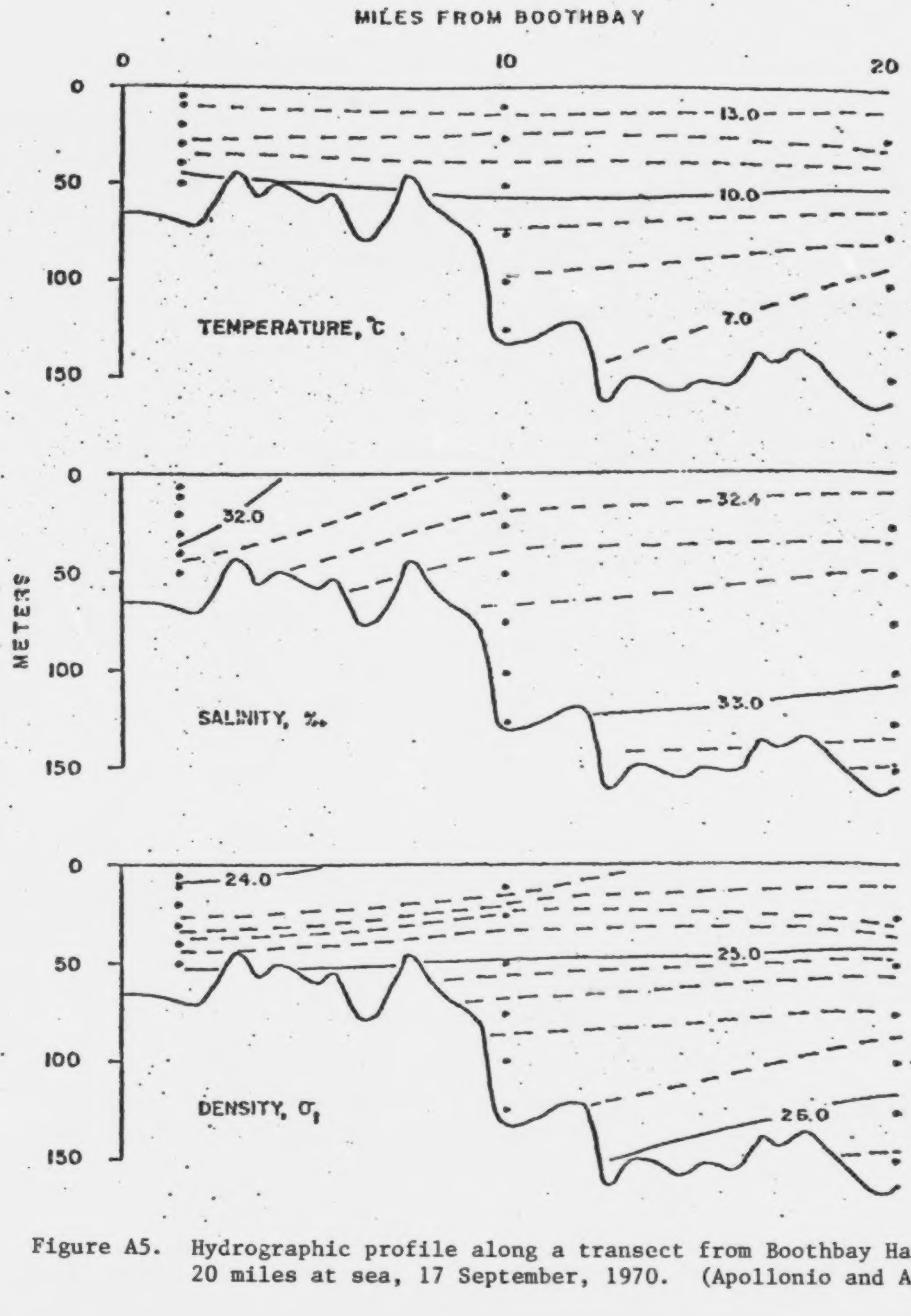

Figure A5. Hydrographic profile along a transect from Boothbay Harbor to 20 miles at sea, 17 September, 1970. (Apollonio and Applin 1972)

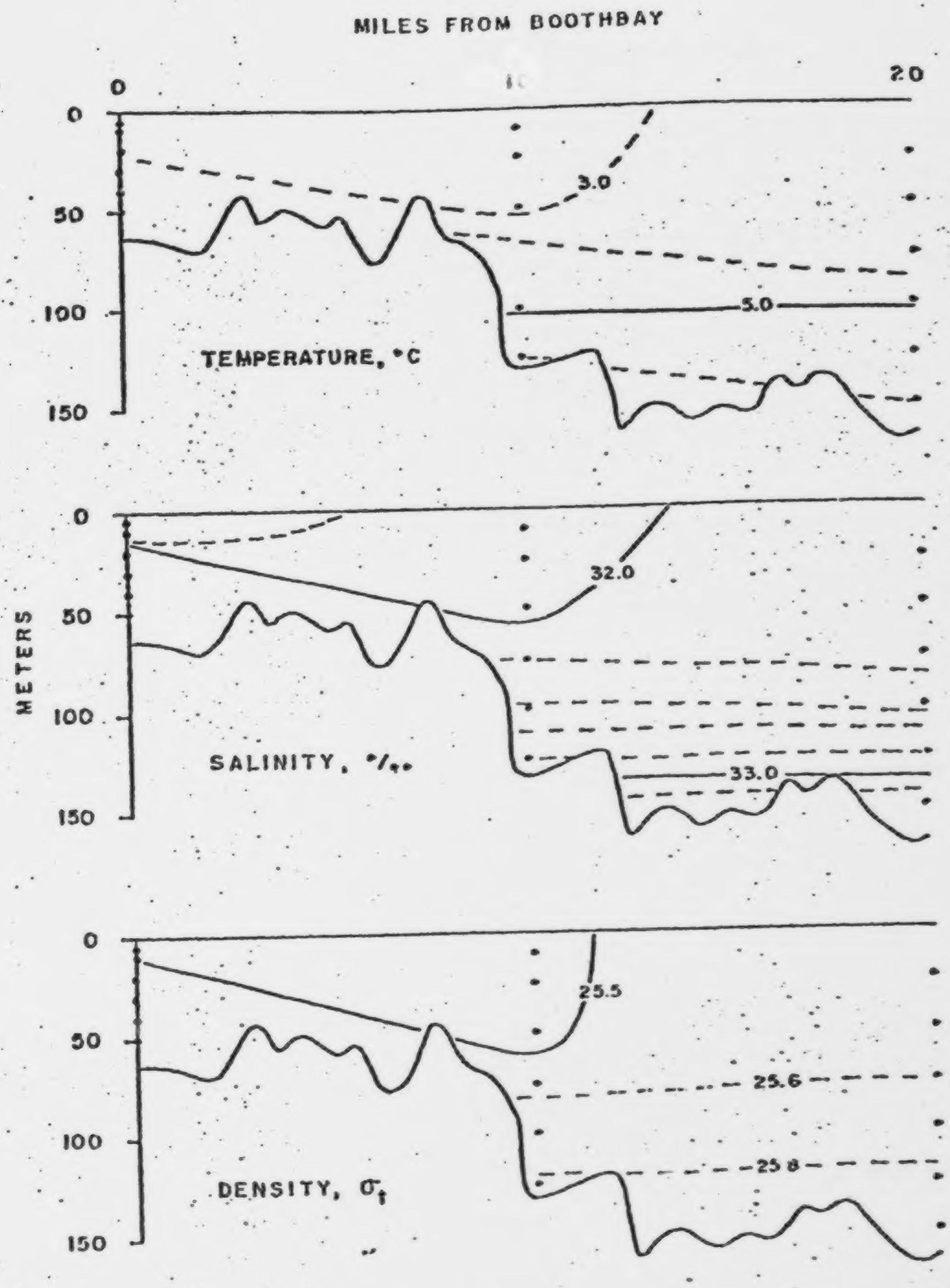

Figure A6. Hydrographic profile along a transect from Boothbay Harbor to 20 miles at sea, 17 February, 1971. (Apollonio and Applin 1972)

APPENDIX B

Surface Temperatures and Salinities of Coastal Stations Illustrated in Figure 4-5 (chapter 4) 21 November, 1974, to 27 November, 1975.

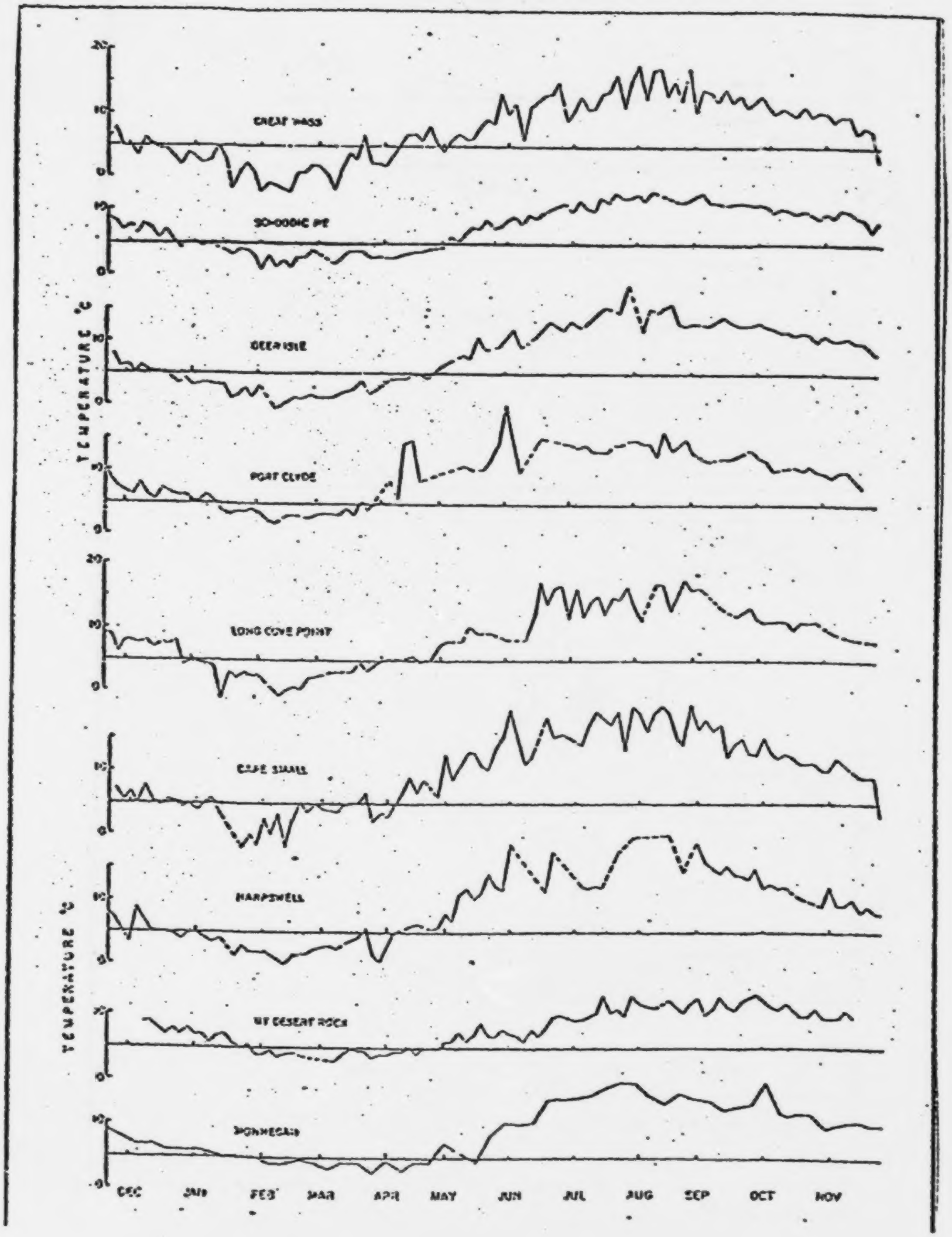

Figure B1. Surface temperatures at coastal stations (see chapter 4, figure 4-5 for locations), 21 November, 1974, to 27 November, 1975 (Spiers et al. 1976).

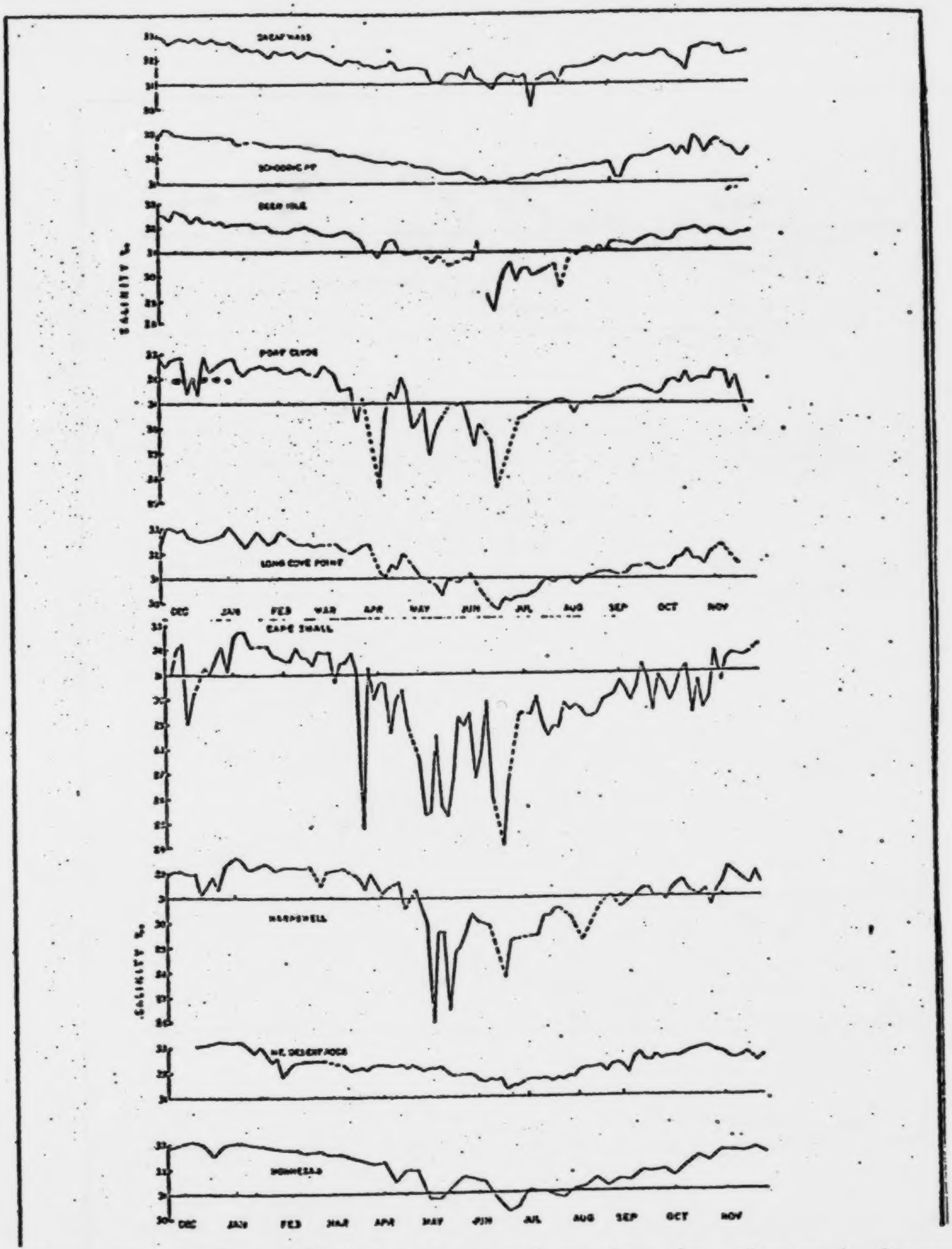

Figure B2. Surface salinities at coastal stations (see chapter 4, figure 4-5 for locations), 21 November, 1974, to 27 November, 1975 (Spiers et al. 1976).

APPENDIX C

Temperatures and Salinities at the Surface, Ten Meters, Twenty Meters, Thirty Meters and the Bottom in the Coastal Waters of the Gulf of Maine.

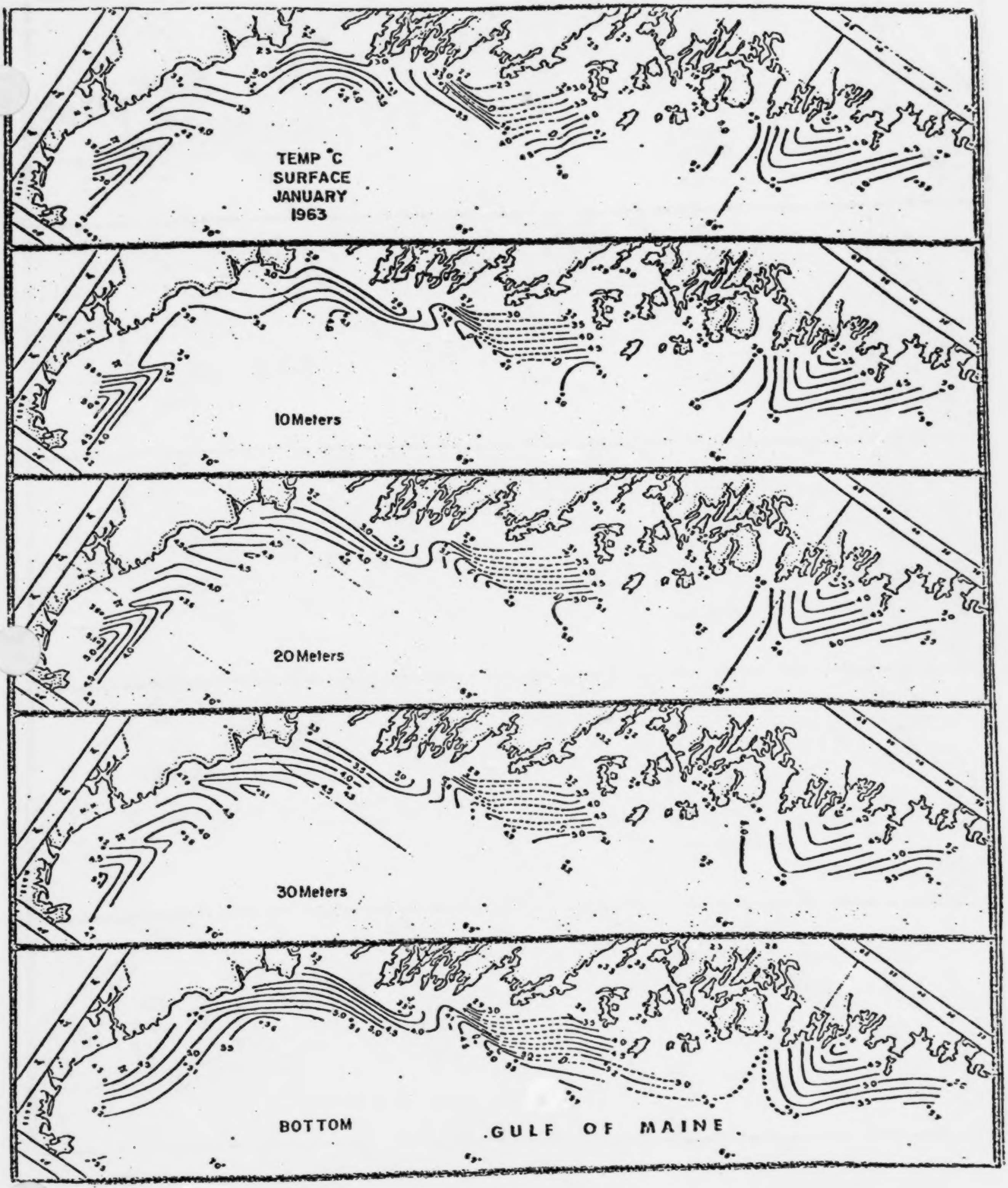
TEMP °C
SURFACE
JANUARY
1963
10 Meters
20 Meters
30 Meters
BOTTOM
GULF OF MAINE

Figure C1. Temperature by depth in the coastal waters of the Gulf of Maine, January 1963 (Graham 1970a).

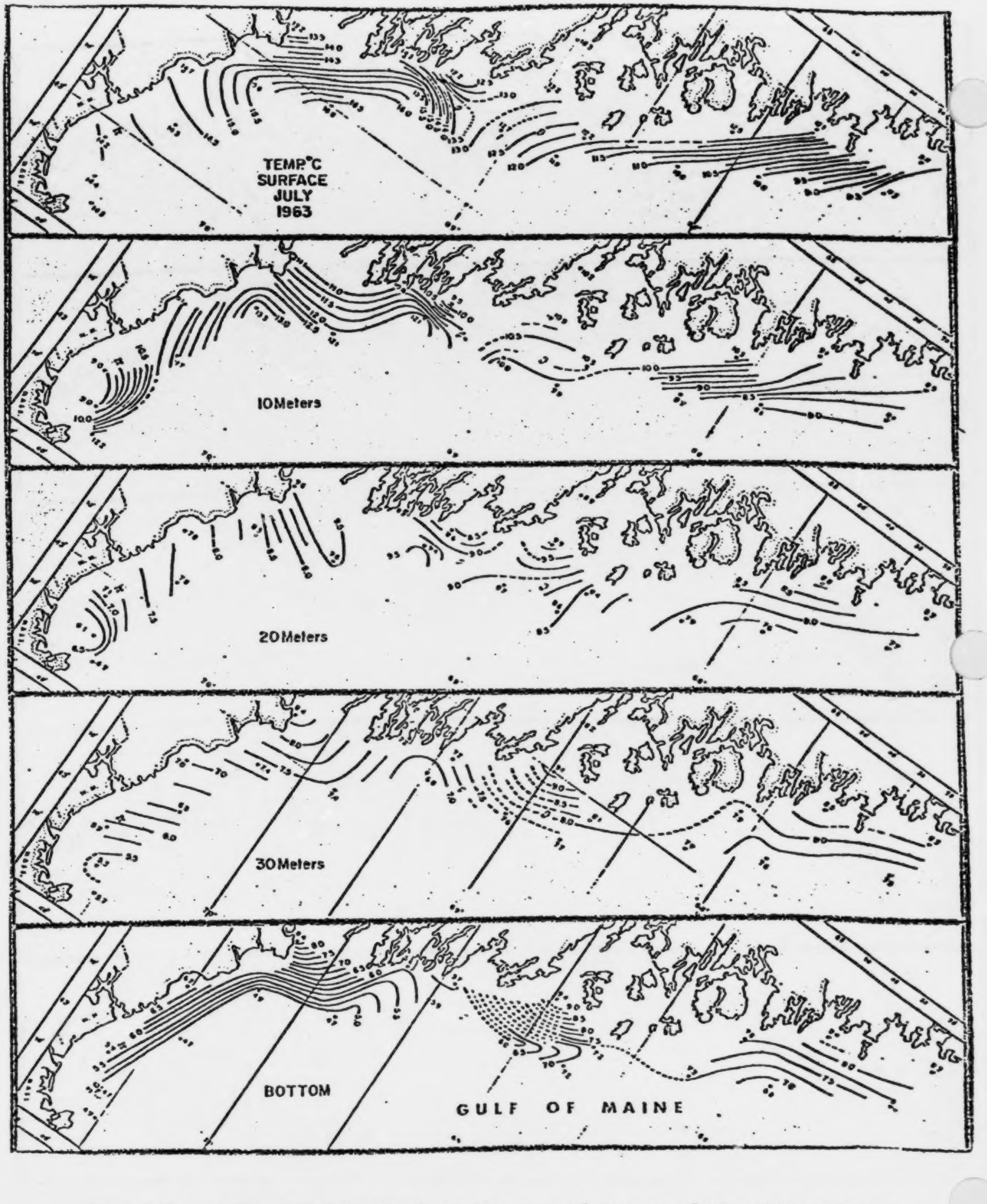
TEMP. °C
SURFACE
JULY
1963
10Meters
20Meters
30Meters
BOTTOM
GULF OF MAINE

Figure C2. Temperature by depth in the coastal waters of the Gulf of Maine, July 1963 (Graham 1970a).

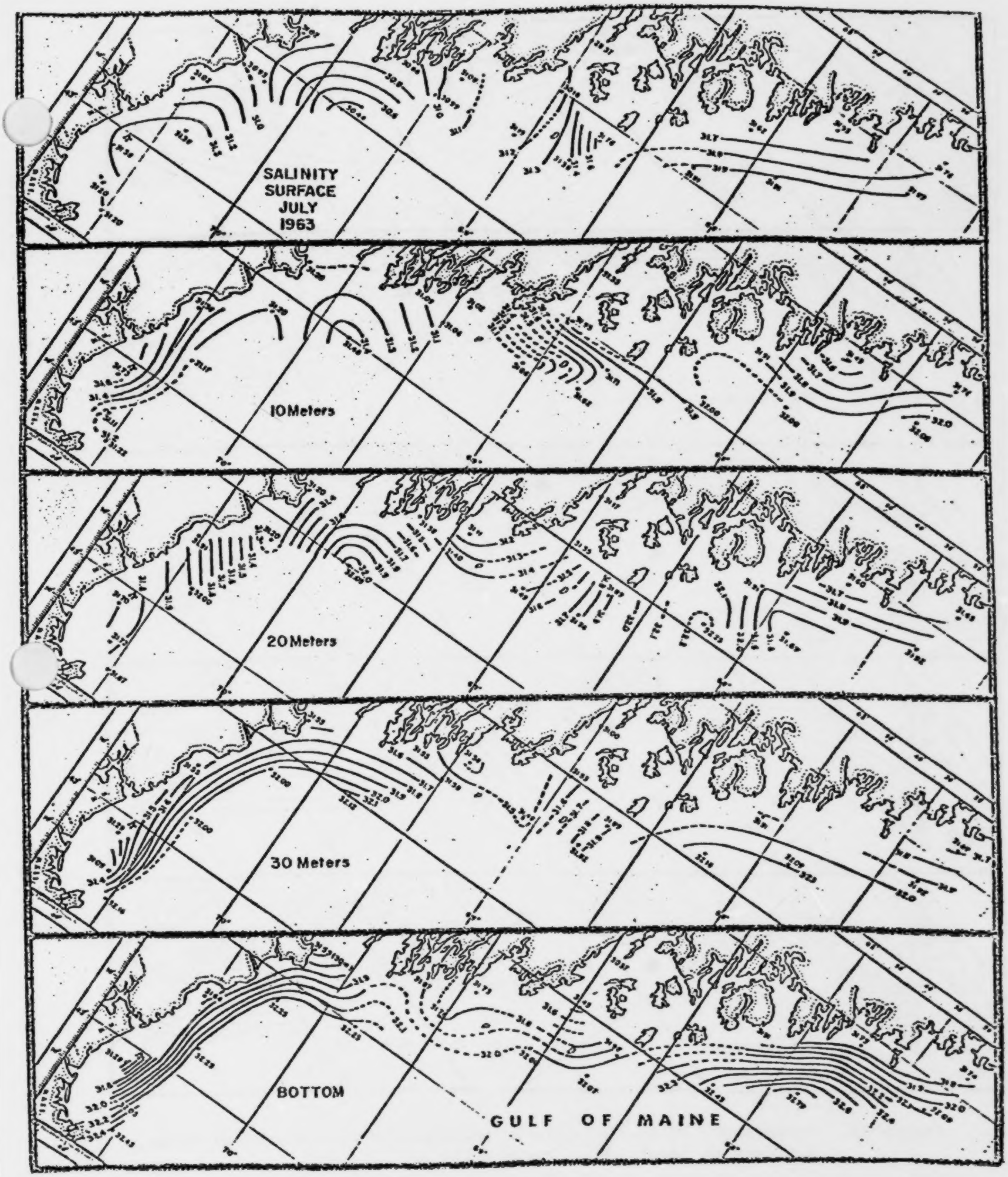
SALINITY
SURFACE
JULY
1963
10 Meters
20 Meters
30 Meters
BOTTOM
GULF OF MAINE

Figure C3. Salinity by depth in the coastal waters of the Gulf of Maine, July 1963 (Graham 1970a).

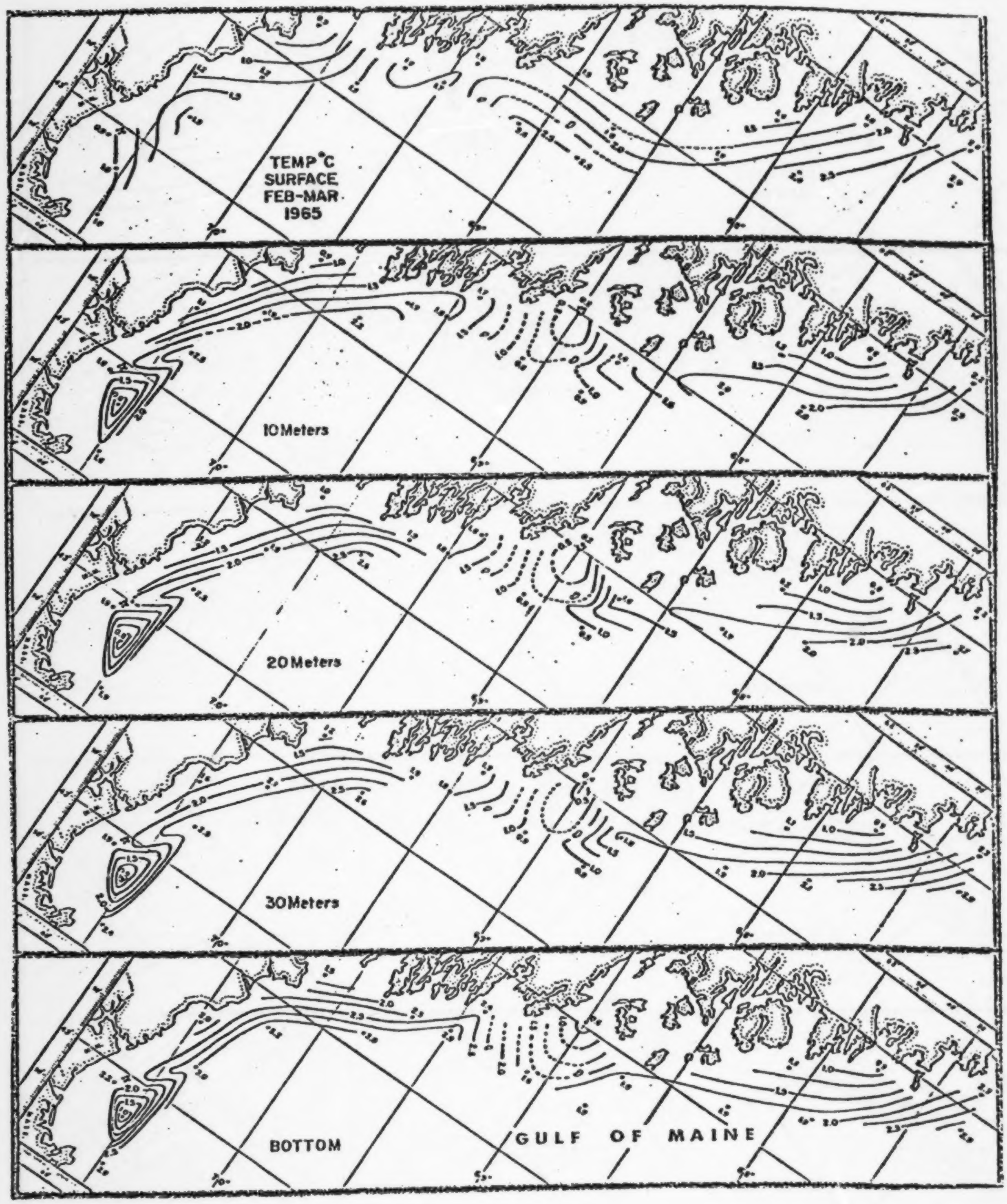
TEMP °C
SURFACE
FEB-MAR
1965
10 Meters
20 Meters
30 Meters
BOTTOM
GULF OF MAINE
70°

Figure C4. Temperature by depth in the coastal waters of the Gulf of Maine, February to March 1965 (Graham 1970a).

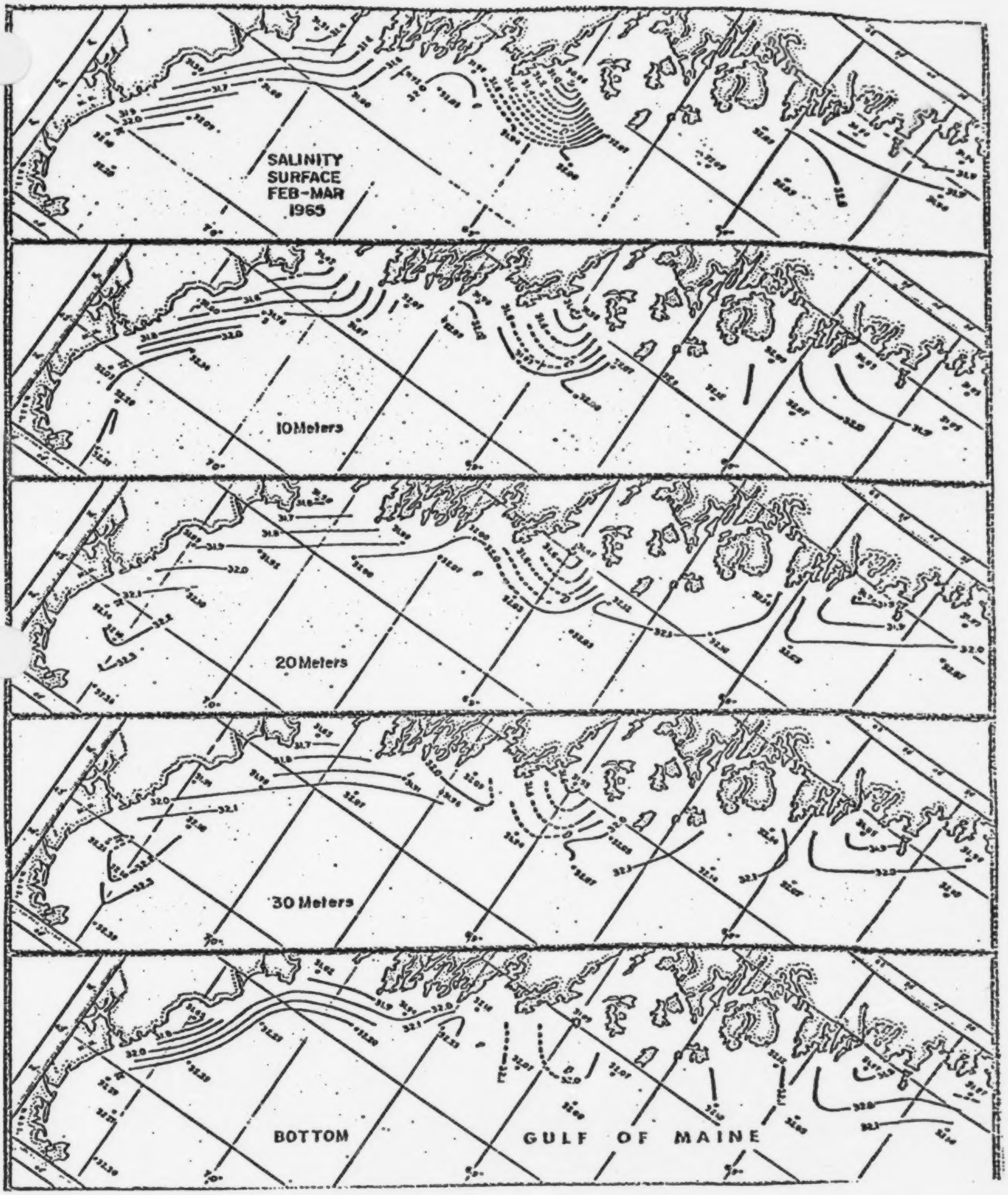
SALINITY
SURFACE
FEB-MAR
1965
10 Meters
20 Meters
30 Meters
BOTTOM
GULF OF MAINE

Figure C5. Salinity by depth in the coastal waters of the Gulf of Maine, February to March 1965 (Graham 1970a).

APPENDIX D

Surface Salinities and Temperatures in the Gulf of Maine

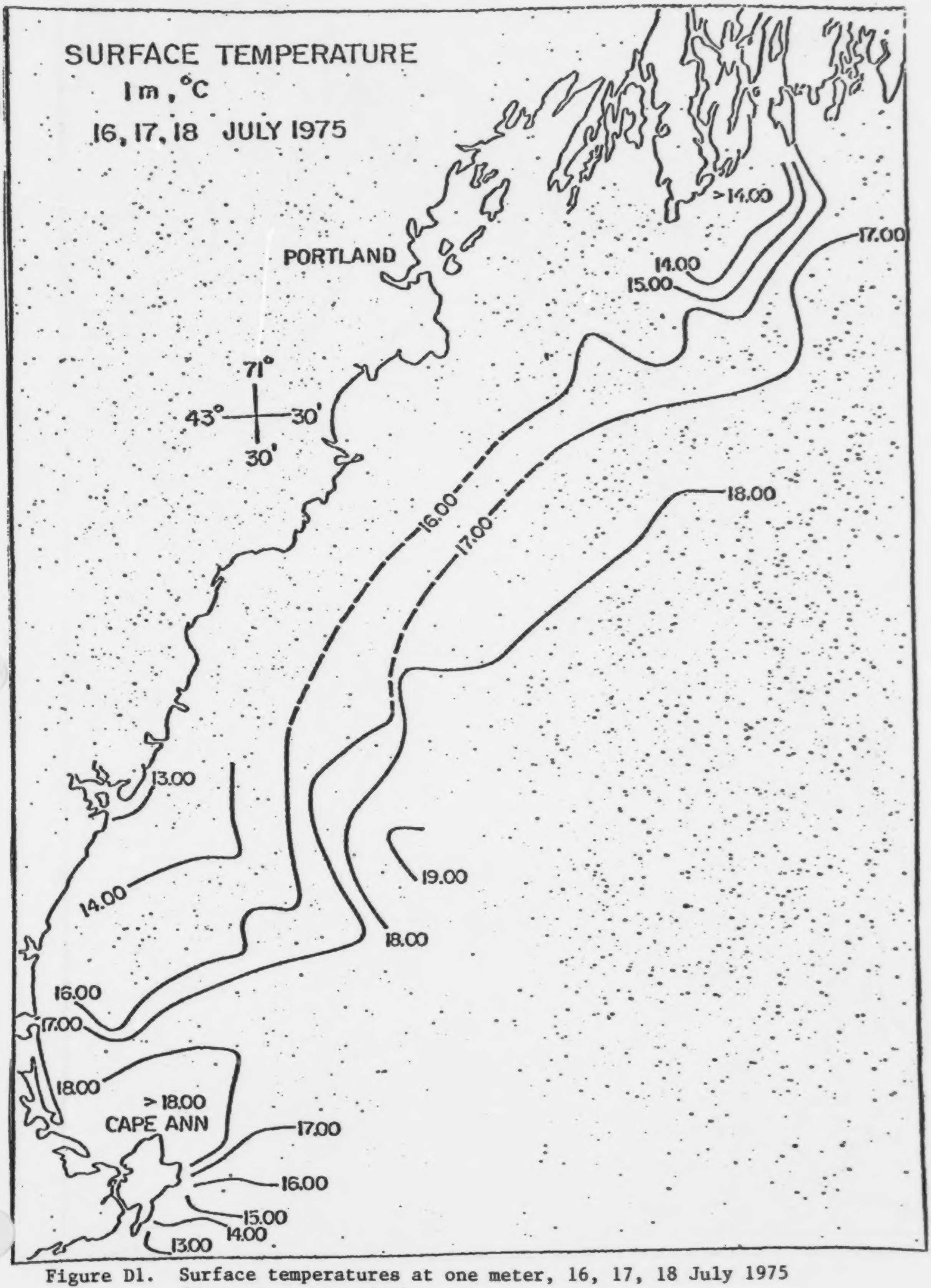
SURFACE TEMPERATURE
1m, °C
16, 17, 18 JULY 1975
PORTLAND
71°
43°
30'
30'
>14.00
14.00
15.00
17.00
16.00
17.00
18.00
13.00
19.00
14.00
18.00
16.00
17.00
18.00
>18.00
CAPE ANN
17.00
16.00
15.00
14.00
13.00

Figure D1. Surface temperatures at one meter, 16, 17, 18 July 1975 (Yentsch et al. 1976).

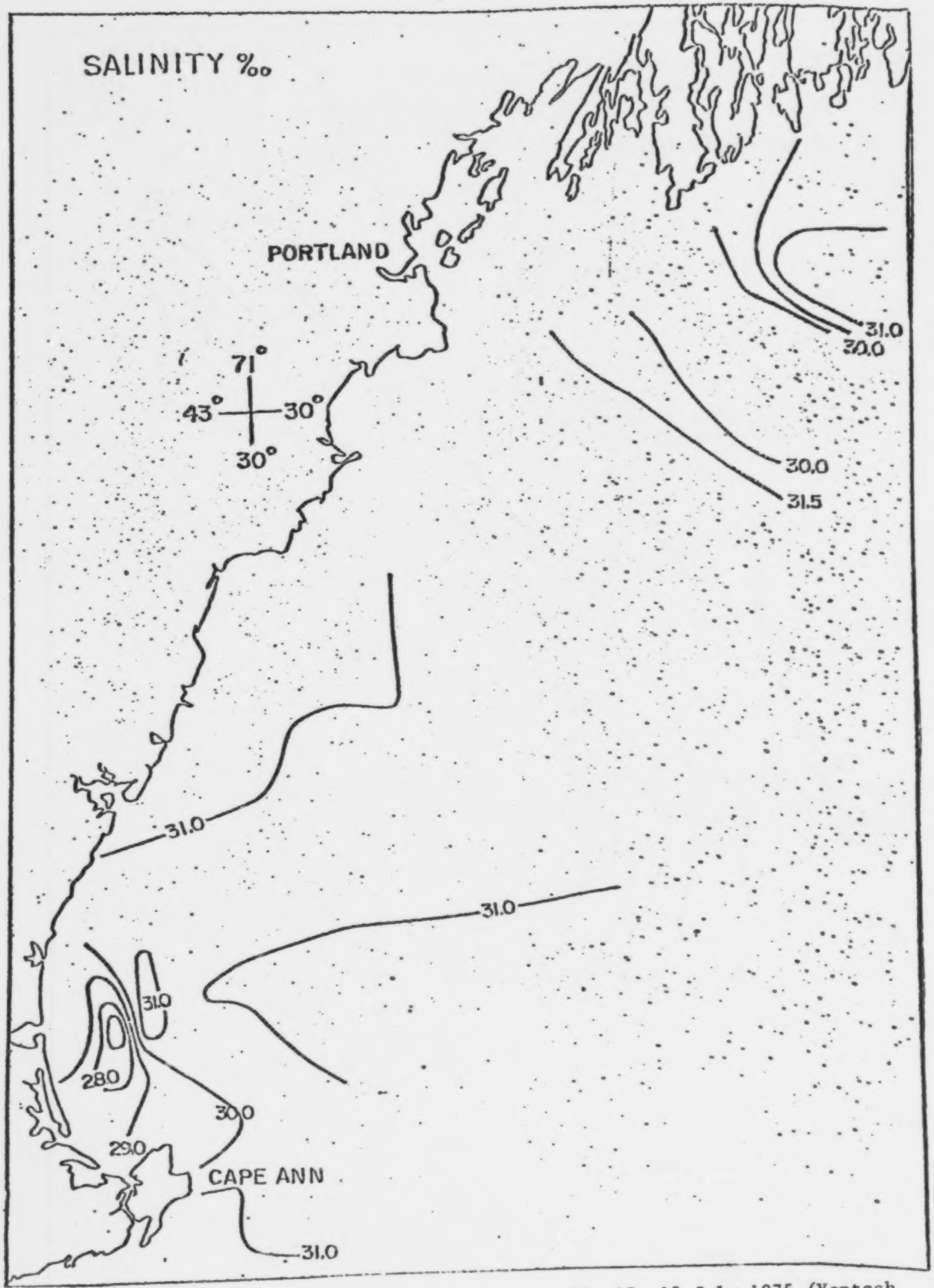
SALINITY ‰
PORTLAND
71°
43°
30°
30°
31.0
30.0
30.0
31.5
31.0
31.0
31.0
28.0
30.0
29.0
CAPE ANN
31.0

Figure D2. Surface salinities at one meter, 16, 17, 18 July 1975 (Yentsch et al. 1976).

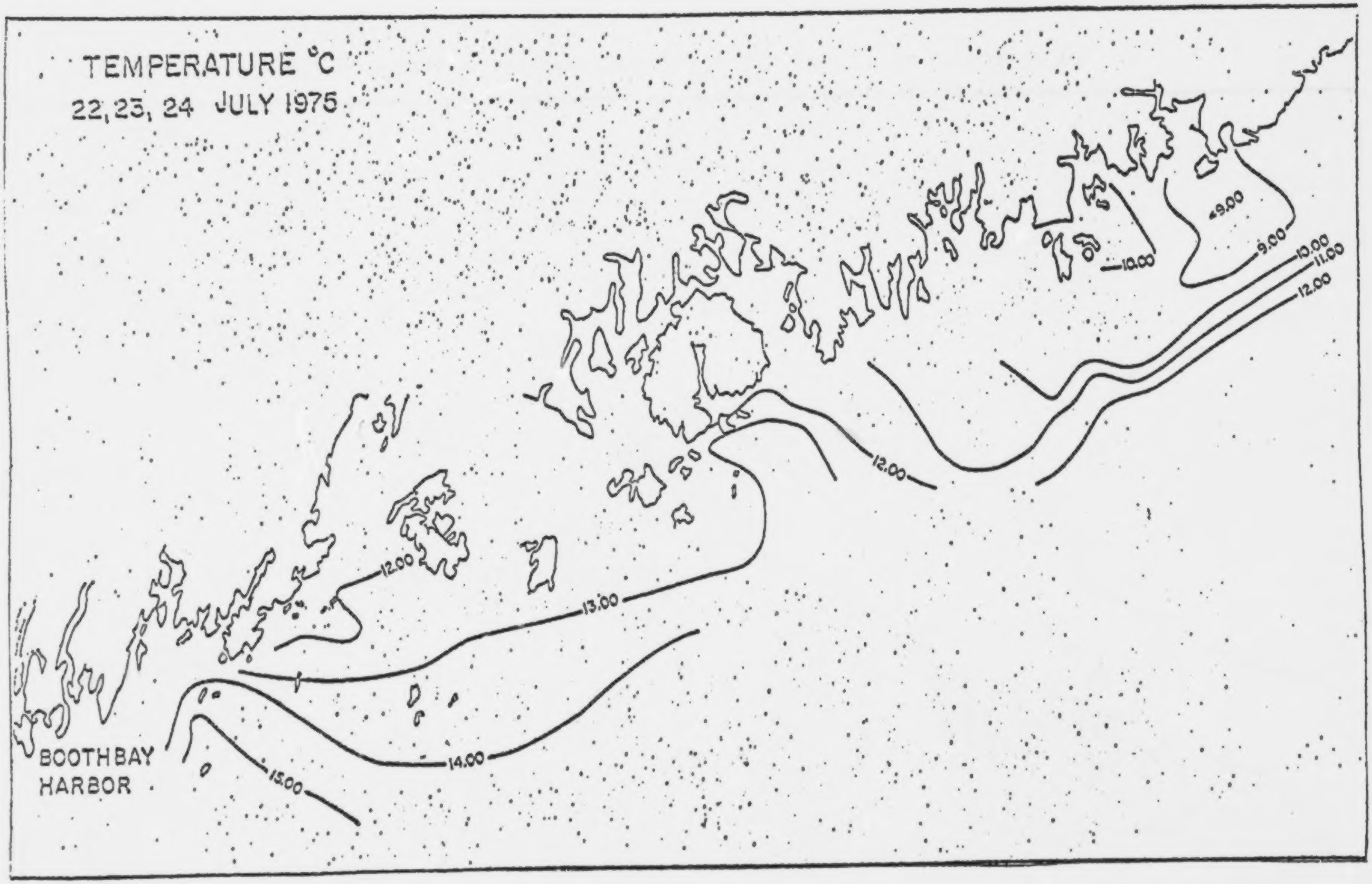
TEMPERATURE °C
22, 23, 24 JULY 1975
9.00
9.00
10.00
10.00
11.00
12.00
12.00
12.00
13.00
14.00
15.00
BOOTHBAY HARBOR

Figure D3. Surface temperatures at one meter 22, 23, 24 July 1975 (Yentsch et al. 1976).

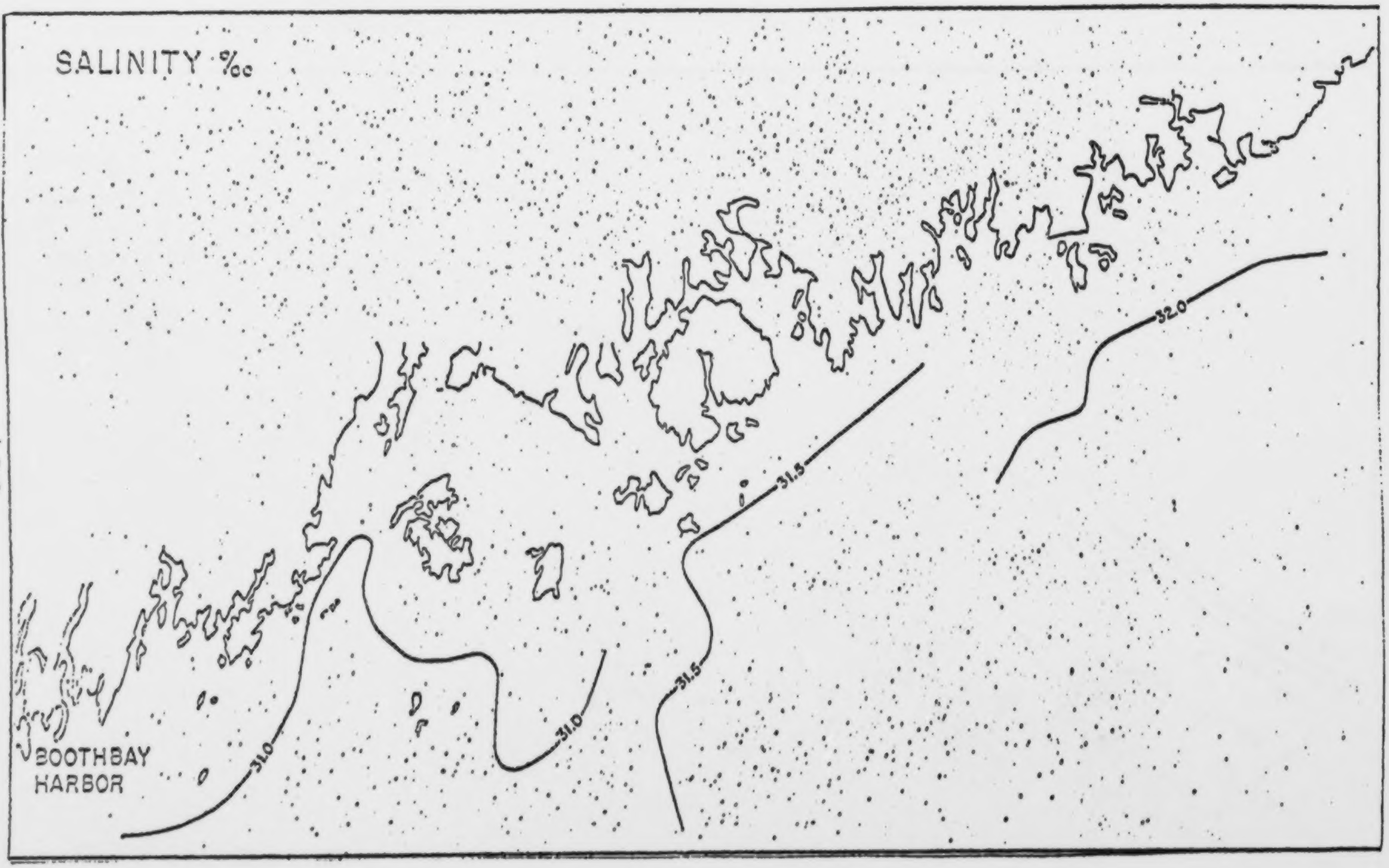
SALINITY ‰
32.0
31.5
31.5
31.0
31.0
BOOTHBAY HARBOR

Figure D4. Surface salinities at one meter, 22, 23, 24 July 1975 (Yentsch et al. 1976).

APPENDIX E

List of Benthic Invertebrate Species Found in Maine by REgion. (Crosses indicate recent records and pluses indicate older than 1940 records. The column labelled M is for those species occuring in Maine but outside the six regions; Doggett, Larsen, and Sykes, unpublished.)

PHYLUM PORIFERA

	Regions						
	1	2	3	4	5	6	M
Class Calcarea							
Family Homocoelidea							
Clathrina coriacea					x	x	
Leucosolenia sp.			x		x	x	x
Leucosolenia botryoides	+				x	x	x
Family Heterocoelidae							
Scypha sp.	+		x			x	
Scypha ciliata	+				x	x	x
Class Desmospongiae							
Order Keratosa							
Family Halisarcidae							
Halisarca sp.			x			x	x
Order Haplosclerida							
Family Desmacidonidae							
Desmacidon peachii							x
Isodictya sp.	+						+
Isodictya deichmannae					x	x	x
Isodictya infundibuliformis	+						+
Isodictya lobata	+						+
Isodictya palmata					x	x	
Family Haliclonidae							
Haliclona sp.	+			x	+	x	x
Haliclona canaliculata			x		x	x	

	Regions						
	1	2	3	4	5	6	M
Haliclona loosanoff	x	x			x		x
Haliclona oculata	x	x	x	x	x	x	x
Haliclona urceolus					+		
Order Poecilosclerida							
Family Tedaniidae							
Tedania suctoria					+	x	
Family Microcionidae							
Microciona prolifera	+		x		x	x	
Family Myxillidae							
Iophon nigricans	x				x	x	x
Myxilla fimbriata					x	x	
Myxilla incrustans					x	x	x
Family Mycalidae							
Mycale lingua					+	x	
Mycale minuta							x
Mycalecarmia ovulum					+	x	
Order Halichondrida							
Family Halichondridae							
Halichondria sp.	+	x		x	x		
Halichondria bowerbanki			x			x	x
Halichondria panicea	x	x	x	x	x	x	x
Pellina sitiens			x		x	x	x
Order Axinellida							
Family Axinellidae							
Cladocroce ventilabrum	+		x		+		
Hymeniacidon heliophila					+		

	Regions						
	1	2	3	4	5	6	M
Order Hadromerida							
Family Suberitidae							
Polymastia sp.	+				+		
Polymastia robusta	+				x	x	+
Suberites sp.	+				x		+
Suberites ficus			x		+	x	x
Subertechinus hispidus	+	+			+		x
Trichostemma sp.	+						
Trichostemma sol							x
Family Clionidae							
Cliona sp.	+						x
Cliona celata	x		x		x	x	x
Cliona vastifica	x					x	
Order Epipolasida							
Family Jaspidae							
Topsentia genitrix					+		

	REGIONS						
	1	2	3	4	5	6	M
PHYLUM CNIDARIA							
Class Hydrozoa							
Order Athecata							
Family Hydridae							
Protohydra sp.				x			
Family Corymorphiidae							
Corymorpha pendula	+				+	x	x
Euphysa aurata					+		
Family Tubularriidae							
Tubularia sp.		x	x		x	x	x
Tubularia crocea	+				x	x	x
Tubularia indivisa	+	+					+
Tubularia larynx				x		x	x
Tubularia spectabilis					x	x	
Tubularia tenella	+			x	x		x
Family Acaulidae							
Acaulis primarius	+	x			x	+	
Family Corynidae							
Linvillea agassizi					+		
Sarsia sp.						+	
Sarsia tubulosa	+			+		x	x
Family Pennariidae							
Pennaria tiarella	+						
Family Clavidae							
Clava sp.							x

	Regions						
	1	2	3	4	5	6	M
Clava leptostyla	+		x	x	x	x	x
Cordylophora lacustris		x		x			
Family Hydractiniidae							
Hydractinia sp.						x	
Hydractinia echinata	+		x		x	x	
Podocoryne sp.	+		x		x	x	
Podocoryne borealis						+	
Podocoryne carnea		x			x	x	
Stylactis arge							x
Family Bougainvilliidae							
Aselomaris michaelis		x					
Bimera brevis	+						
Bougainvillia sp.							x
Bougainvillia britannica							x
Bougainvillia carolinensis	+		x	x	+		
Bougainvillia superciliaris						+	+
Family Pancleidae							
Catablema vesicaria						+	x
Leuckartiara octona						+	
Family Eudendriidae							
Eudendrium sp.			x		x	x	x
Eudendrium album					+		
Eudendrium capillare	+	+					
Eudenrium carneum				+			
Eudendrium dispar			x	+	+		
Eudendrium insigne	+						

	Regions						
	1	2	3	4	5	6	M
Eudendrium rameum	+			x			
Eudendrium ramosum	+	+			+		x
Eudendrium tenellum	+						
Eudendrium tenue	+	+					x
Eudendrium vaginatum	+						x
Order Limonomedusae							
Family Olindiidae							
Gonionemus vertens			x		x	x	x
Order Thecata							
Family Campanularidae							
Campanularia sp.					x	x	x
Campanularia abyssa							x
Campanularia amphora					x		x
Campanularia angulata	+						x
Campanularia calceolifera	+				+		
Campanularia flexuosa	+			x	x	x	x
Campanularia fragilis	+				x		
Campanularia gelatinosa	+						
Campanularia groenlandica						+	
Campanularia hincksii	+						
Campanularia integra	+				+	+	
Campanularia neglecta	+				+		
Campanularia pygmaea	+						
Campanularia verticillata	+						+
Campanularia volubilis	+						+
Clytia sp.							x
Clytia cylindrica				x	+		
Clytia edwardsi	+						

	Regions						
	1	2	3	4	5	6	M
Clytia johnstoni	+		x	x		+	
Clytia volubilis						+	x
Cuspidella grandis					+		
Eucopella caliculata	+				+		x
Gonothyraea gracilis	+			x			
Gonothyraea integra							x
Gonothyraea loveni	+			x	+		
Obelia sp.		x		x	x		x
Obelia articulata	+			x	x	+	
Obelia biscuspidata	+						
Obelia commissuralis			x		x	x	x
Obelia dichotoma				x	x	+	
Obelia equilateralis							x
Obelia geniculata	+		x	x	x	x	x
Obelia gracilis					+		
Obelia longissima	+	x	x		+		
Obelia medusa					x		
Phialidium sp.							x
Phialidium bicophorum					+		
Phialidium languidum	+			+	+	+	
Family Campanulinidae							
Calycella syringa	x			x	+	x	
Opercularella lacerata	x				+		
Opercularella pumila	x						x
Stegopoma plicatile							x

	Regions						
	1	2	3	4	5	6	M
Family Mitrocomidae							
Tiaropsis sp.	+						
Tiaropsis multicirrata	+					+	
Family Laodiceidae							
Staurophora mertensi	+					+	
Family Melicertidae							
Melicertum octocostatum			x	+	+	+	x
Family Eutimidae							
Tima formosa							x
Family Aequoreidae							
Aequorea aequorea							x
Aequorea albida						+	
Rhacostoma atlanticum						+	
Family Lafoeidae							
Filellum serpens	+			x	+		
Grammaria abietina	+	+		x			+
Hebella calcarata					+		
Hebella pocillum	x					x	
Lafoea dumosa	+	x		x	+		
Lafoea fruticosa	+				x		
Lafoea gracillima	+	x		x			
Family Halecidae							
Halecum sp.					x		
Halecum articulosum	x					x	
Halecum beani	+			x	+	x	
Halecum halecinum	+				+	x	x

	Regions						
	1	2	3	4	5	6	M
Halecum muricatum	+	+				x	+
Halecum tenellum	x					x	
Family Sertularidae							
Abietinaria sp.						x	
Abietinaria abietina		x	x	x	x	x	x
Diphasia fallax	x			x	+	x	+
Diphasia rosacea	x			x	x		
Diphasia tamarisca						x	
Hydrallmania falcata	+	x			+	x	
Sertularella giganea					x		
Sertularella humilis							x
Sertularella polyzonias	+	+			+	+	+
Sertularella rugosa	+				+	x	x
Sertularella triscuspidata	x	x	x	x	x	x	+
Sertularia sp.	x	x	x	x	x	x	x
Sertularia pumila	x	x	x	x	x	x	x
Thuiaria sp.			x				
Thuiaria argentea	x	x		x	+	x	
Thuiaria cupressina	+			x	x	x	+
Thuiaria latiuscula	+	+					
Thuiaria lorchitis	x					x	
Thuiaria similis	x					x	
Thuiaria thuja					+		
Family Plumularidae							
Antennularia americana						x	

	Regions						
	1	2	3	4	5	6	M
Antennularia antennina	+						
Schizotricha gracillima						x	
Schizotricha tenella						x	
Thecocarpus myriophyllum						x	
Order Trachymedusae							
Family Rhopalonematidae							
Aglantha digitale						+	
Order Siphonophora							
Suborder Cystonectae							
Family Physaliidae							
Physalia physalis						+	
Suborder Physonectae							
Stephanomia sp.	+					x	x
Stephanomia cara						+	
Class Scyphozoa							
Order Stauromedusae							
Family Eleutherocarpidae							
Haliclystus auricula	+				x	x	x
Haliclystus salpinx			x		x	x	
Lucernaria quadricornis	+		x		x	x	x
Family Cleistocarpidae							
Craterolophus convolvulus						x	
Halmocyanthus lagena					+	+	
Thaumatoscyphus atlanticus			x				
Order Semaeostomae							

	Regions						
	1	2	3	4	5	6	M
Family Cyanidae							
Cyanea capillata	x		x		x	x	x
Family Ulmaridae							
Aurelia aurita	x	x	x	x	x	x	x
Phacellophora camtschatica						+	
Class Anthozoa							
Subclass Octocorallia							
Order Stolonifera							
Family Clavulariidae							
Clavularia modesta	+	+					+
Order Alcyonacea							
Family Alcyoniidae							
Alcyonium sp.					+		
Alcyonium digitatum	+		x			+	x
Alcyonium polyoum					x		
Family Nephtheidae							
Drifa glomerata							x
Gersemia rubiformis	+						x
Subclass Zoantharia							
Order Actiniaria							
Tribe Athenaria							
Family Edwardsiidae							
Edwardsia sp.				x		+	x
Edwardsia elegans	x	x	x	x	+	x	x
Edwardsia sipunculoides	+		x		+		
Nematostella vectensis		x					

	Regions						
	1	2	3	4	5	6	M
Family Halcampoididae							
Ilyanthus laevis						+	
Family Haloclavidae							
Peachia parasitica					+	+	
Family Halcampidae							
Halcampa sp.	x						
Halcampa duodecimcirrata	+		x		+	x	
Family unknown							
Bunodes spectabilis	+						
Tribe Thenaria							
Family Actinidae							
Bolocera tuediae	x		x				+
Bunodactis stella	+				x	x	x
Tealia felira	+	x	x		x	x	x
Family Actinostolidae							
Actinostola callosa						x	x
Stomphia coccinea	x				x	x	
Family Hormathiidae							
Actinuage verrilli	+						+
Hormanthia nodosa	+						+
Family Metridiidae							
Metridium sp.	x				x	x	x
Metridium senile	x	x	x	x	x	x	x
Family Aiptasiomorphidae							
Haliplanella luciae			x	x	x	x	x
Family Diadumenidae							
Diadumene leucolena					+	x	x

	Regions						
	1	2	3	4	5	6	M
Order Ceriantharia							
Family Cerianthidae							
Ceriantheopsis americanus		x			x		
Cerianthus sp.			x				
Cerianthus borealis	x	+		x	x	x	
Group unknown							
Agalma elegans						x	

	Regions						
	1	2	3	4	5	6	M
PHYLUM CTENOPHORA							
Class Tentaculata							
Order Cydippida							
Family Pleurobrachiidae							
Mertensia ovum						+	
Pleurobrachia sp.					+		
Pleurobrachia pileus	+			+		x	x
Order Lobata							
Family Bolinopsidae							
Bolinopsis sp.	+						
Bolinopsis infundibulum	+		x	+	x	x	x
Family Mnemiidae							
Mnemiopsis leidyi			x				
Class Nuda							
Order Beroida							
Family Beriodae							
Beroe cucumis	+			+	+	+	x
PHYLUM PLATHELMINTHES							
Class Turbellaria							
Order Acoela							
Family Proporidae							
Childia fusca							x
Family Microstomidae							
Microstomum sp.	x				+		
Order Alloeocoela							
Family Plagiostomidae							
Plagiostomum sp.							x
Plagiostomum album					x		

	Regions						
	1	2	3	4	5	6	M
Family Monocelidae							
Monocelis sp.					+		x
Order Trichladida							
Family Procerodidae							
Foviella sp.					+		x
Foviella affinis	+		x			+	x
Procerodes sp.					+		
Procerodes littoralis	+		x			x	x
Family Bdellouridae							
Bdelloura sp.							x
Bdelloura candida	+		x				
Order Polycladida							
Family Plehniidae							
Discocelides sp.					+		
Discocelides ellipsoides	+					+	
Family Stylochidae							
Stylochus sp.					+		
Stylochus ellipticus	+				x		
Family Leptoplanidae							
Euplana gracilis				x	x		x
Notoplana sp.					+		
Notoplana atomata	x	x	x	x	x	x	x

PHYLUM RHYNCHOCOELA

Class Anopla

Order Paleonemertea

	Regions						
	1	2	3	4	5	6	M
Family Carinomidae							
Carinoma tremaphoros							x
Family Cephalothricidae							
*Cephalothrix linearis**	+					x	
Procephalothrix spiralis	+				x	+	x
Order Heteronemertea							
Family Lineidae							
Cerebratulus sp.	x	x		x	x		x
Cerebratulus lacteus	x	x	x	x	x	x	x
Cerebratulus luridus	x						
Cerebratulus marginatus					x	+	
Lineus sp.					+		x
Lineus arenicola							x
Lineus bicolor		x	x		x	x	
Lineus dubius	x						x
Lineus pallidus				x			
Lineus ruber		x	x		x	x	x
Lineus socialis	x				x	x	x
Lineus viridis	+				+	+	
Micrura sp.	x			x	x		x
Micrura affinis	+				x	+	x
Micrura albida		X			x		x
Micrura caeca							x
Micrura dorsalis					x	x	
Micrura leidyi				x		x	x

*probably *Procephalothrix spiralis*

	Regions						
	1	2	3	4	5	6	M
Micrura rubra	x				x	+	
Parapoilia aurantiacea					+		
Zygenolia sp.					+		
Class Enopla							
Order Hoplonemertea							
Suborder Monostylifera							
Family Emplectonematidae							
Emplectonema giganteum	+						x
Family Prosorhochmidae							
Oerstedia dorsalis	+	x				+	x
Family Amphiporidae							
Amphiporus sp.		x			x	x	x
Amphiporus angulatus	+		x		x	x	x
Amphiporus bioculatus			x		x	x	
Amphiporus caecus						x	
Amphiporus cruentatus			x				
Amphiporus frontalis						x	
Amphiporus griseus						x	
Amphiporus groenlandicus						x	
Amphiporus lactifloreus						+	
Amphiporus ochraceus						x	
Amphiporus pulcher	+					+	+
Amphiporus tetrasorus							x
Zygonemertes viriscens	x						
Family Tetrastemmatidae							

	Regions						
	1	2	3	4	5	6	M
Tetrastemma sp.	+				+	x	
Tetrastemma candidum			x	x	+	x	
Tetrastemma vittatum	+		x				
Order Bdellonemertea							
Family Malacobdellidae							
Malacobdella grossa					+		
PHYLUM ASCHELMINTHES							
Class Priapulida							
Halicryptus sinolosus	x						
Priapalus sp.	+						
Priapulus caudatus	+	x				x	x
Class Neonaloda							
PHYLUM ENTOPROCTA							
Family Pedicellinidae							
Barentsia gracilis					+		
Barentsia major					+		
Pedicellina sp.	+						
Pedicellina cernua			x		+		x

PHYLUM BRYOZOA

	Regions						
	1	2	3	4	5	6	M
Class Gymnolaemata							
Order Ctenostomata							
Family Alcyonidiidae							
Alcyonidium sp.	+		x				+
Alcyonidium gelatinosum					x		
Alcyonidium hirsutum	+						
Alcyonidium mamillatum					+		
Alcyonidium parasiticum					+		
Alcyonidium polyoum			x		x		
Alcyonidium verrilli		x					
Family Flustrellidridae							
Flustrellidra sp.	x	x	x	x	x	x	x
Flustrellidra hispida	+				x	x	x
Family Vescularidae							
Bowerbankia sp.						x	
Bowerbankia gracilis		x	x		+		x
Bowerbankia imbricata							x
Vesicularia sp.	+						
Vesicularia familiaris							x
Family Walkeriidae							
Aeverrilla armata					+		
Walkeria uva	+						
Order Cyclostomata							
Family Crisiidae							
Crisia sp.			x			x	
Crisia cribraria		x			+		
Crisia eburnea	+	x	x	x	x		x

	Regions						
	1	2	3	4	5	6	M
Family Tubuliporidae							
Idmonea atlantica	+	x			+		x
Tubulipora sp.							+
Tubulipora flabellaris	+	x			+		x
Tubulipora liliacea			x		+	x	
Tubulipora lobulata					+		
Family Oncousoeciidae							
Oncousoecia canadensis					+		
Oncousoecia diastoporides					+		x
Family Diaperoeciidae							
Diaperoecia harmeri			x		+		
Diplosolen obelia					x		
Family Lichenoporidae							
Lichenopora sp.					x		
Lichenopora hispida	+	x	x	x	x	x	x
Lichenopora verrucaria	+				x	x	
Order Cheilostomata							
Suborder Anasca							
Family Aeteidae							
Aeta sp.					+		
Aeta anguina					+		
Aeta recta							x
Family Scrupariidae							
Eucratea loricata	+	x	x	x	+		+
Haplota sp.		x					
Haplota clavata		x			+		

	Regions						
	1	2	3	4	5	6	M
Scruparia ambigua							x
Scruparia chelata							x
Family Membraniporidae							
Membranipora sp.		x	x		x	x	x
Family Electridae							
Electra sp.	x			x		x	
Electra arctica				x	+		
Electra crustulenta	+	x					
Electra monostachys		x	x	x	+		
Electra pilosa	+		x	x	x	x	x
Family Flustridae							
Flustra foliacea					x		
Family Hinchsinidae							
Cauloramphus cymbaeformis					+	x	
Family Calloporidae							
Amphiblestrum osburni					+		
Amphiblestrum trifolium					+		
Callopora sp.						x	
Callopora aurita		x			+	x	x
Callopora craticula		x					
Callopora dumerili					+		
Callopora lineata	+				+		
Tegella arctica					+		
Tegella armifera					+		
Tegella unicornis		x			x	x	

	Regions						
	1	2	3	4	5	6	M
Family Bugulidae							
Bugula sp.	+			x	x	x	
Bugula avicularia	+	x					
Bugula harmsworthi				offshore			
Bugula simplex			x		+	x	x
Bugula turrita	+	x	x			x	x
Dendrobeania sp.				x			
Dendrobeania decorata						x	
Dendrobeania murrayana	+	x		x	+	x	x
Family Scrupocellariidae							
Caberea sp.					+		
Caberea ellisii	+	x	x	x	+	x	x
Scrupocellaria scabra	+				+		
Tricellaria gracilis				x	+		
Tricellaria peachii	+			x	+		
Tricellaria ternata	+	+			+	+	
Familv Cribrilinidae							
Cribrilina sp.				x			
Cribrilina annulata					+	x	x
Cribrilina punctata		x	x		+		
Suborder Ascophora							
Family Hincksisporidae							
Hincksipora spinulifera					+		
Family Umbonulidae							

	Regions						
	1	2	3	4	5	6	M
Umbonula sp.					+		x
Umbonula arctica		x		x	+		
Family Hippothoidae							
Hippothoa sp.		x				x	
Hippothoa expansa					x		
Hippothoa hyalina		x	x		x	x	x
Family Gigantoporidae							
Cylindroporella sp.					+		
Cylindroporella tubulosa					+		x
Family Stomachetosellidae							
Posterula sarsii					+		
Stomachetosella hincksii					+		
Stomachetosella sinuosa					+		
Family Schizoporellidae							
Schizomavella sp.					+		
Schizomavella auriculata	+	x			+		
Schizoporella sp.							x
Schizoporella unicornis		x	x		x		x
Stephanosella biaperta					x	x	
Family Microporellidae							
Microporella ciliata					+	x	x
Family Hippoporinidae							
Ceidochasma contracta		x					
Hippoporina sp.		x	x	x	+		
Hippoporina americana		x			+		
Hipporina reticulatopunctata					+		
Hipporina propinqua					+		

	Regions						
	1	2	3	4	5	6	M
Hipporina smitti					+		
Family Celleporinidae							
Turbicellepora canaliculata					+	x	
Family Escharellidae							
Escharella sp.				x			
Escharella abyssicola					+		
Escharella immersa		x			+		
Escharella ventricosa					+		
Family Smittinidae							
Palmicellaria skenei					+		+
Parasmittina sp.				x			
Parasmittina jeffreysi					x		
Parasmittina nitida		x					
Porella sp.						x	
Porella acutirostris					+		
Porella concinna					+		
Porella redupicata					+		
Porella smitti	+	+					+
Pseudoflustra solida					+		
Rhamphostomella bilaminata					+		
Rhamphostomella costata					+		
Rhamphostomella ovata		x			+		
Rhamphostomella radiatula					+		
Rhamphostomella scabra					+		+
Smittina sp.					+		

	Regions						
	1	2	3	4	5	6	M
Smittina bella					x		
Smittina rigida					x		
Family Cheiloporinidae							
Cryptosula sp.					x		x
Cryptosula pallasiana	+		x		x		x
Family Reteporidae							
Hippoporella hippopus					+		
Family Myriaporidae							
Myriapora coarctata					+		
Myriozoella plana					+		
Family uncertain							
Lepralia sp.*	+						+
PHYLUM PHORONIDA							
Phoronis architecta		x					
PHYLUM BRACHIOPODA							
Class Articulata							
Order Terebratulida							
Family Cancellothyridjdae							
Terebratulina septentrionalis	x	x	x	x	x	x	x

ny possible synonyms

	Regions						
	1	2	3	4	5	6	M
PHYLUM MOLLUSCA							
Class Aplacophora							
Order Crystallophissonoidea							
Family Crystallophissonidae							
Crystallophrisson nitidulum	x	x		x			
Class Polyplacophora							
Order Neoloricata							
Family Lepidopleuridae							
Lepidopleurus cancellatus				x	x		
Family Hanleyidae							
Hanleya dalli						x	
Hanleya mendicaria	x	x			x	x	
Family Ischnochitonidae							
Ischnochiton sp.					x		
Ischnochiton alba	+		x	x	x	x	x
Tonicella sp.							x
Tonicella blaneyi					+		x
Tonicella marmorea	x			x	x	x	x
Tonicella ruber	x	x	x	x	x	x	x
Family Chaetopleuridae							
Chaetopleura sp.					+		
Chaetopleura apiculata							m
Family Molpaliidae							
Amicula vestita	+		x		x		

	1	2	3	4	5	6	M	
Class Gastropoda								
Subclass Prosobranchia								
Order Archaeogastropoda								
Family Fissurellidae								
Diodora cayenensis	x							
Diadora noachina	+	+						
Puncturella noachina	+	x	x		+	x	x	
Family Acmaeidae								
Acmaea testudinalis	x	x	x	x	x	x	x	
Family Lepetidae								
Lepeta caeca	+	x			x	x		
Family Trochidae								
Calliostoma occidentale	+			+	x	x		
Margarites costalis	+	+			x	x	x	
Margarites groenlandica	+				x	x		
Margarites helicinus	x	x	x	x	x	x	x	
Margarites minutissimus	+							
Margarites olivaceus	+				+	x		
Moelleria costulata		x		x	x	x		
Solariella obscura	+	+			+	+	x	
Order Mesogastropoda								
Family Lacunidae								
Lacuna pallidula	+					x		
Lacuna vincta	x	x	x	x	x	x	x	(not inner Penobscot Bay)
Family Littorinidae								
Littorina sp.	x	x	x					
Littorina irrorata					x			

	1	2	3	4	5	6	M	
Littorina littorea	x	x	x	x	x	x	x	
Littorina obtusata	x	x	x	x	x	x	x	
Littorina saxatilis	x	x	x	x	x	x	x	
Family Rissoidae								
Alvania sp.		x						
Alvania arenaria	+	x		x	+	x		
Alvania areolata				x	+	x		
Alvania carinata	+	x			+	+		
Alvania oastanea				+	+	x		
Alvania harpa				x				
Alvania latior	+							
Cingula sp.	x			x				
Onoba aculeus	x	x	x		x	x	x	
Family Hydrobiidae								
Hydrobia sp.	x	x	x			x		
Hydrobia salsa		x	x	x				(estaurine)
Hydrobia totteni	x	x	x	x	x	x	x	
Family Skeneopsidae								
Skeneopsis planorbis	x	x	x		x	x	x	
Family Turritellidae								
Tachyrhyncus erosa	+	+			+	+		
Turritellopsis acicula	+				+	x		
Family Cerithiidae								
Cerithiopsis costulatum						+		
Family Epitoniidae								
Acirsa borealis	+					+		
Epitonium greenlandicum	+	+			+	x		

	1	2	3	4	5	6	M
Family Melanellidae							
Couthouyella striatula	+			x	+	+	
Family Aclididae							
Aclis sp.				x			
Aclis striata						+	
Family Hopponicidae							
Hipponix sp.	+						
Family Trochotopidae							
Torellia vestita				off shore			
Trichotropis borealis	+	x		x	+	x	
Family Crepidulidae							
Crepidula sp.				x			
Crepidula convexa	x		+		+		x
Crepidula fornicata	x	x	x	x	x	x	x
Crepidula plana	+		x	+	x		x
Crucibulum striatum	+			+	x	x	
Family Aporrhaidae							
Aporrhais sp.					+		
Aporrhais occidentalis	+	x			x	x	x
Family Velutinidae							
Marsenina ampla						+	
Marsenina glabra	+	+				x	
Marsenina prodita						+	
Velutina sp.		x	x				x
Velutina laevigata	+	+	x		x	x	x
Velutina undata	+		x		x	x	

	1	2	3	4	5	6	M
Family Naticidae							
Amauropsis islandica	+						
Natica clausa	+	+			+	x	x
Natica pusilla	+						
Lunatia heros	x	x	x	x	x	x	x
Lunatia immaculata	+	x		x	+	x	
Lunatia levicula	+					+	
Lunatia pallida	+	+			x	x	
Lunatia triseriata	x	x	x	x	x	x	x
Polinices sp.	x	x	x	x		x	x
Polinices duplicatus	+	x	x		x	x	
Polinices nana	+					+	
Sinum sp.	+						
Order Neogastropoda							
Family Muricidae							
Boreotrophon clathratus	+				+	+	
Boreotrophon truncatus	+				+	x	
Nucella lapillus	x	x	x	x	x	x	x
Urosalpinx cinerea	x	x	x		x	x	
Family Columbellidae							
Anachis avara	+						
Anachis haliaeeti			off shore				
Astyris zonalis	+	+					
Mitrella dissimilis				+	+	+	
Mitrella lunata	+	+	x			+	
Mitrella rosacea	+				+	x	

	1	2	3	4	5	6	M
Family Buccinidae							
Buccinum cyaneum					+		
Buccinum undatum	x	x	x	x	x	x	x
Colus sp.		x					
Colus pygmaea	+	x		x	x	x	+
Colus sabinii		x				x	x
Colus stimpsoni	+	x	x	+	x	x	x
Neptunea decemcostata	x	+	x	+	x	x	x
Family Melongenidae							
Busycon canaliculatum	x						
Family Nassariidae							
Nassarius obsoleta	x	x	x	x	x		x
Nassarius trivittatus	x	x	x	x	x	+	x
Nassarius vibex	x						x
Family Cancellaridae							
Admete couthouyi	x	x			x	+	
Family Turbinellidae							
Ptychatractus ligatus	+					x	
Family Turridae							
Oenopota sp.				x	x	x	
Oenopota bicarinata	+	+			x	x	
Oenopota concinnula					+		
Oenopota decussata	+	+	+		+	+	
Oenopota harpularia	+	+		+	+	+	
Oenopota incisula	+				x	+	
Oenopota pingelii						x	
Oenopota pyramidalis	+			x	+	x	
Pleurotomella jeffreysii				x			
Propebela blaneyi					+		
Propebela cancellata	+	x			x		

	1	2	3	4	5	6	M
Propebela exarata	+				+		
Propebela gouldii	+				+		
Propebela nobilis	+	x			+	x	
Propebela tenuicostata						+	
Propebela turricula	+	x	x	x		x	
Family Terebridae							
Terebra dislocata						+	
Subclass Euthyneura							
Order Pyramidelloida							
Family Pyramidelloidae							
Odostomia sp.					x	x	x
Odostomia bisuturalis		x	x	x			+
Odostomia eburnea	+						
Odostomia gibbosa	+						
*Odostomia modesta**					+	+	
Odostomia sulcosa					+		
Odostomia trifida		+	+	x			
Odostomia winkleyi	x						
Pyramidella ventricosa						+	
Sayella fusca	+		+				
Turbonilla bushiana						x	
Turbonilla interrupta	+		x				
Turbonilla nivea					+		
Turbonilla polita						+	+
Order Cephalaspidea							
Family Cylichnidae							
Cylichna sp.				off shore			
Cylichna alba	x	x			x	x	

*probably = *O. conoidea*

	1	2	3	4	5	6	M
Cylichna gouldi	x				+		
Cylichna occulta				x			
Scaphander punctostriatus	+						
Family Philinidae							
Philine angulata	+						
Philine lima	+				+	x	
Philine quadrata	+						
Philine sinuata	+						
Family Diaphanidae							
Diaphana hiemalis	+		+				
Diaphana minuta	+	x			+		
Family Haminoeidae							
Haminoea solitaria		x	x		x		
Family Retusidae							
Retusa canaliculata	x		x				
Retusa obtusa	+	x	x		+		
Order Thecosomata							
Family Limacinidae (Spiratellidae)							
Limacina leseuri	x						
Limacina retroversa	+						
Order Gymnosomata							
Family Clionidae							
Clione limacina	+					x	
Paedoclione doliiformis	+						
Order Basommatophora							
Family Ellobiidae							
Melampus bidentatus	x		x				
Ovatella myosotis	+		x	+		+	x

	1	2	3	4	5	6	M
Order Sacoglossa							
Family Plakobranchidae							
Elysia chlorotica			x				x
Order Nudibranchia							
Suborder Doridoida							
Family Dorididae							
Doris sp.	+						
Cadlina laevis	+	+			+	x	
Family Gymnodorididae							
Polycera sp.			off shore				
Polycera dubia	+		x		x	x	x
Family Onchidorididae							
Acanthodoris pilosa		x	x		x	x	x
Adalaria proxima					x	x	
Lamellidoris sp.				x			
Lamellidoris aspera	x		x	x	x	x	x
Lammelidoris diademata			x				x
Lamellidoris diaphana					x	+	
Lamellidoris fusca	+		x	x	x	x	x
Lamellidoris grisea					+	x	
Lamellidoris muricata						+	
Lamellidoris tenella						+	
Family Goniodorididae							
Ancula gibbosa					x	x	
Suborder Arminoidea							
Family Dendronotidae							
Dendronotus sp.					x		
Dendronotus frondosus	+			x	x	x	x
Dendronotus robustus	+				x	x	x

	1	2	3	4	5	6	M
Family Dotodae							
Doto coronata	+		x		x	x	x
Doto formosa						+	x
Tenellia fuscata					x		x
Suborder Aeolidoidea							
Family Coryphellidae							
Coryphella sp.					x		
Coryphella nobilis						x	x
Coryphella pellucida			x		+	x	x
Coryphella rufibranchialis	+		x		x	x	x
Coryphella salmonacea						x	
Family Eubranchidae							
Eubranchus sp.					x		
Eubranchus pallidus				x		x	x
Eubranchus tricolor						x	
Family Cuthonidae							
Cuthona concinna						x	x
Cuthona stimpsoni						x	
Tergipes tergipes	+			x	x	x	x
Family Facelinidae							
Facelina bostoniensis						x	
Family Favorinidae							
Catriona aurantia						x	x
Cratena pilata						x	
Cratena viridis						x	
Family Aeolidiidae							
Aeolidia papillosa	+	x	x		x	x	x

	Regions						
	1	2	3	4	5	6	M
Class Scaphopoda							
Family Dentaliidae							
Dentalium sp.				+			
Dentalium agile	+						
Dentalium entale	x	x	x		x	x	x
Dentalium occidentale	+					+	x
Family Siphonadentaliidae							
Siphonadentalium sp.			offshore				
Class Bivalvia							
Subclass Prionodesmata							
Order Protobranchia							
Family Solemyacidae							
Solemya borealis	+						
Solemya velum	+						
Family Nuculidae							
Nucula sp.		x	x	x			x
Nucula delphinodonta	x	x	x	x	x	x	x
Nucula proxima (annulata)	x	x	x	x	x	x	
Nucula tenuis	+	x		x	x		
Family Nuculanidae							
Nuculana minuta	+	x					x
Nuculana pernula	x	x					x
Nuculana tenuisulcata	+	x	x	x	+	+	x
Portlandia inflata				X			
Portlandia iris			offshore				
Portlandia lucida	+						

	Regions						
	1	2	3	4	5	6	M
Yoldia sp.	x						
Yoldia limatula	x	x	x	x	x	x	
Yoldia myalis	+	x	x	x	+	+	
Yoldia sapotilla	x	x	x	x	x	x	
Yoldia thraciaeformis	x	x	x	x	+	+	
Subclass Pteriomorphia							
Order Prionodontida							
Family Arcidae							
Anadara transversa	x						
Bathyarca anomala				offshore			
Bathyarca pectunculoides	+						x
Order Pteroconchida							
Family Mytillidae							
Crenella decussata	x	x	x	x	+	x	
Crenella faba	x	x		+	x		
Crenella glandula	+	+	x	x	x	x	+
Dacrydium vitreum	+						
Modiolus demissus	x	x	x	x	x	x	x
Modiolus modiolus	x	x	x	x	x	x	x
Musculus sp.							x
Musculus corrugatus	+	+		+			+
Musculus discors	+	+		x	x	x	
Musculus niger	+	x		x	x	x	+
Mytilus edulis	x	x	x	x	x	x	x

	Regions						
	1	2	3	4	5	6	M
Family Ostreidae							
Crassostrea virginica		x	x				x
Ostrea edulis		x					
Family Pectinidae	x	+	x		x	x	x
Chlamys islandica	x	+	x		x	x	x
Pecten groenlandicus							+
Placopecten magellanicus	x	x	x	x	x	x	x
Family Anomiidae							
Anomia aculeata	x	x	x	x	x	x	x
Anomia simplex	x	x	x	x	x	x	x
Subclass Teleodesmata							
Order Heterodontida							
Family Astartidae							
Astarte sp.		x					
Astarte borealis	x	x		x	+	x	
Astarte castanea	+	x	x		x	x	
Astarte elliptica	+	+				x	
Astarte montagui					x	+	
Astarte portlandica	+				x	x	
Astarte quadrans	+				+	x	+
Astarte subaequilatera	+	x	x	x	+	x	+
Astarte undata	x	x	x	x	x	x	x
Family Carditidae							
Cyclocardia borealis	x	x	x	x	x	x	x
Cyclocardia novangliae	+				+	+	

	Regions						
	1	2	3	4	5	6	M
Family Arcticidae							
Arctica islandica	x	x	x	x	x	x	x
Family Leptonidae							
Kellia suborbicularis				x			
Family Montacutidae							
Montacuta sp.	x						
Mysella sp.	x						
Mysella plantulata	+					+	
Family Turtoniidae							
Turtonia sp.	x						
Turtonia minuta	+				x		
Family Lucinidae							
Lucinoma sp.	x						
Lucinoma filosa	+					+	
Family Thyasiridae							
Axinopsida orbiculata	+				+		
Thyasira sp.				x		x	
Thyasira equalis						+	
Thyasira flexuosa	x	x		x	x		
Thyasira simplex	+						
Thyasira trisinuata	+	+					
Family Ungulinidae							
Diplodonta verrilli				x			
Family Cardiidae							
Cerastoderma sp.							x

	Regions						
	1	2	3	4	5	6	M
Cerastoderma pinnulatum	x	x	x	x	x	x	x
Clinocardium ciliatum	+	x		x	+	x	
Serripes groenlandicus	+				+		
Family Veneridae							
Gemma gemma	x	x	x	x	x	x	
Liocyma fluctuosa					+		
Mercenaria mercenaria	x		x		x		x
Pitar morrhuana	x	x	x	x	x		
Family Petricolidae							
Petricola pholadiformis	+		x		x		x
Family Mactridae							
Mulinia lateralis	+	x	x				
Spisula polynyma	+				x	+	
Spisula solidissima	x	x	x	x	x		x
Family Mesodesmatidae							
Mesodesma arctatum	+			x			x
Mesodesma deauratum	X						
Family Tellinidae							
Macoma sp.		x		x			
Macoma balthica	x	x	x	x	x	x	x
Macoma calcarea	x	+		x	x	+	+
Macoma tenta			+	x			
Tellina agilis	x	x	x	x	x	x	x
Family Semelidae							
Cumingia tellinoides	x				x		

	Regions						
	1	2	3	4	5	6	M
Family Solecurtidae							
Tagelus plebius					x		
Family Solenidae							
Ensis directus	x	x	x	x	x	x	x
Siliqua costata	+		x		x		x
Family Myidae							
Mya sp.						x	
Mya arenaria	x	x	x	x	x	x	x
Mya truncata	x		x			x	+
Family Hiatellidae							
Cyrtodaria siliqua	+	x			x		x
Hiatella sp.		x		x		x	
Hiatella arctica	x	x	x	x	x	x	x
Hiatella striata		x		x		x	
Panomya arctica	+				+	+	+
Family Pholadidae							
Barnea tuncata							x
Xylophaga atlantica	x			x	x		
Zirfaea crispata	+		x		x	x	
Family Teredinidae							
Psiloteredo megotara	+				+		
Teredo sp.	+				x		
Teredo navalis			x	x	x		x

Subclass Anomalodesmata

Order Eudesmodontida

	Regions						
	1	2	3	4	5	6	M
Family Pandoridae							
Pandora glacialis			x	x			
Pandora gouldiana	+	x	x		+	x	
Family Lyonsiidae							
Lyonsai arenosa	+	x		x	+		
Lyonsia hyalina	+	x	x	x	x	x	
Family Periplomatidae							
Periploma fragilis	+	x	x	x	+		x
Periploma leanum	x				+	+	
Periploma papyratium	x	x		x			
Family Thraciidae							
Thracia conradi	x		x		x	+	
Thracia myopis	x	x	x	x	+	+	
Thracia septentrionalis							
Order Septibranchida							
Family Cuspidariidae							
Cuspidaria sp.	x			x			
Cuspidaria arctica	+						
Cuspidaria glacialis				offshore			
Cuspidaria pellucide	+					+	
Class Cephalopoda							
Subclass Coleoidae							
Order Teuthidida							
Family Ommastrephidae							
*Illex illecebrosus**	+				x	x	x
Family Loliginidae							
*Loligo pealei**	+		x		x		

*pelagic, therefore species distributions are not necessarily accurate

	Regions						
	1	2	3	4	5	6	M
Order Octopodida							
Family Octopodidae							
Bathypolypus articus	x				+		x
Octopus bairdii	+					x	x

PHYLUM ANNELIDA

	1	2	3	4	5	6	M
Class Polychaeta							
Order Archiannelida							
Family Dinophilidae							
Dinophilus sp.	x		x				x
Nerilla antennata							x
Order Phyllodocida							
Family Phyllodocidae							
Eteone sp.	x	x	x	x		x	x
Eteone flava	+	x	x	x		+	
Eteone heteropoda		x	x	x		x	
Eteone lactea	x	x	x	x	x		x
Eteone longa	x	x	x	x	x	x	x
Eteone trilineata	x	x	x	x		x	
Eulalia sp.	+						
Eulalia bilineata	x			x	+	+	
Eulalia pistacia	+				+		
Eulalia viridis		x	x		+	x	x
Eumida sanguinea	x		x	x	x		
Mystides borealis						+	
Paranaitis sp.							x
Paranaitis kosteriensis			offshore				
Paranaitis speciosa				x	x	+	x
Phyllodoce sp.	x	x	x	x		x	x
Phyllodoce arenae	x	x	x	x			

	1	2	3	4	5	6	M
Phyllodoce groenlandica	x	x	x	x	+	x	x
Phyllodoce maculata	x	x	x	x	x	x	x
Phyllodoce mucosa	x	x	x	x	x	+	x
Family Tomopteridae							
Tompteris helgolandica						+	x
Family Aphroditidae							
Aphrodita hastata	+	x		x	+	x	x
Laetmonice filicornis	+					+	
Family Polynoidae							
Alentiana sp.				x			
Antinoella angusta		x					
Antinoella sarsi	+	x		x			
Arcteobia anticostiensis							x
Enipio gracilis	+	x	x				
Enipio torelli				x			
Eucrantia villosa							x
Gattyana sp.		x					
Gattyana cirrosa		x	x	x	+	x	
Gattyana nutti							x
Harmothoe sp.	x	x		x	x		
Harmothoe acanellae							x
Harmothoe extenuata	x	x	x	x	x	x	x
Harmothoe fragilis							x
Harmothoe imbricata	x	x	x	x	x	x	x
Harmothoe nodosa	+	x	x	x	x	+	
Harmothoe oerstedi	x			x			x

	1	2	3	4	5	6	M	
Harmothoe spinulosa				x				
Hartmania moorei		x		x	x			
Lepidametria commensalis						x	x	
Lepidonotus sp.		x	x		x			
Lepidonotus squamatus	x	x	x	x	x	x	x	
Lepidonotus sublevis		x	x					(estuarine)
Leanira tetragona			offshore					
Family Sigalionidae								
Pholoe minuta	x	x	x	x	x	x	x	
Sigalion sp.			offshore					
Sthenelais limicola					x		x	
Family Chrysopetalidae								
Dysponetus pygmaeus		x				+		
Family Glyceridae								
Glycera sp.	x	x		x		x		
Gylcera americana			x	x	x		x	
Glycera capitata	x	x	x	x	x	x		
Glycera dibranchiata	x	x	x	x	x	x		
Glycera robusta	x	x	x					
Ophioglycera gigantea					x			
Rhynchobolus albus	+	+						
Family Goniadidae								
Goniada maculata	x	x	x	x	x	x		
Goniada norvegica				x	x			

	1	2	3	4	5	6	M
Family Sphaerodoridae							
Ephesiella minuta		x	x	x		x	
Sphaerodorum sp.				x			
Sphaerodorum gracilis						+	
Family Nephtyidae							
Aglaophamus sp.		x	x	x			
Aglaophamus circinata	x	x	x				
Aglaophamus malmgreni		x	x				
Aglaophamus verrilli	x	x					x
Nephtys sp.	x	x	x		x	x	
Nephtys bucera	x	x	x	x		x	x
Nephtys caceca	x	x	x	x	x	x	x
Nephtys ciliata	x	x		x	x	x	
Nephtys discors	x	x		x		x	
Nephtys incisa	x	x	x	x	x	x	x
Nephtys longosetosa	x	x	x	x		x	
Nephtys paradoxa					x	+	
Nephtys picta	x	x		x		x	x
Family Syllidae							
Amblyosyllis sp.	+	+					
Amblyosyllis finmarchica	+		x			x	
Autolytus sp.	x	x	x		x	x	x
Autolytus alexandri	+	x				+	
Autolytus cornutus	+	x	x		+	x	x
Autolytus fasciatus			x				

	1	2	3	4	5	6	M
Autolytus prismaticus	+	x				x	x
Autolytus prolifer			x			x	
Brancia clavata		x	x				
Eusyllis sp.						+	
Eusyllis bloomstrandi					x	x	
Eusyllis lamelligera		x					
Exogone sp.		x		x			
Exogone dispar	x	x	x	x		x	
Exogone hebes	x	x	x	x		x	x
Exogone verugera		x	x		x	x	
Parapionosyllis sp.	x						
Prionosyllis sp.			x				
Sphaerosyllis erinaceus						+	
Shpaerosyllis hystric						+	
Streptosyllis varians						x	
Syllides longocirrata		x				+	
Syllis sp.				x	+		
Syllis cornuta		x	x	x		x	
Syllis gracilis				x	x	x	
Family Hesionidae							
Gyptis vittata	x					+	
Microphthalmus sp.		x	x				
Microphthalmus aberrans		x	x			+	
Microphthalmus sczelkowii		x		x		x	
Nereimyra sp.	offshore						
Nereimyra punctata	offshore						

	1	2	3	4	5	6	M	
Family Pilargidae								
Ancistrosyllis groenlandica		x						
Family Nereidae								
Ceratonereis scotiae					x			
Nereis sp.	x	x	x	x	x	x	x	
Nereis arenaceodentata	x	x		x				
Nereis diversicolor	x	x	x	x		x	x	
Nereis grayi		x	x	x				
Nereis pelagica	x	x	x	x	x	x	x	
Nereis succinea	x	x	x	x	x		x	
Nereis virens	x	x	x	x	x	x	x	
Nereis zonata				x	x	x		
Platynereis dumerili		x		x				
Websternereis tridentata		x						(estuarine)
Order Capitellida								
Family Capitellidae								
Areniella filiformis	+							
Capitella capitata	x	x	x	x		x	x	
Heteromastus sp.				x				
Heteromastus filiformis	x	x	x	x	x	+	x	
Mediomastus ambiseta		x						
Notomastus sp.	x			x				
Notomastus latericeus	+			x	x	x		
Notomastus luridus	+			x	+			

	1	2	3	4	5	6	M
Family Arenicolidae							
Arenicola cristata							x
Arenicola marina		x	x		x	x	x
Family Scalibregmidae							
Polyphysia crassa		x		x			
Scalibregma inflatum	x	x	x	x		+	
Family Maldanidae							
Asychis sp.				x			
Asychis capensis		x					
Axiothella catenata	+						
Clymenella sp.	x	x	x				
Clymenella collaris	x			x			
Clymenella torquata	x	x	x	x	x	x	x
Clymenella zonalis	x	x	x	x		+	
Gravierella sp.		x					
Maldane sarsi	x	x	x	x			
Maldanopsis elongata	x	x	x	x	x		
Nicomache sp.	+			x			
Nicomache lubricalis	x	x			+	+	
Praxillella sp.	+	x					
Praxillella gracilis	x	x		x			
Praxillella praetermissa	+	x		x		+	
Praxillella ornata	+	x					
Rhodine sp.		x					
Rhodine attenuata	x			x			
Rhodine loveni	+	x		x		+	

	1	2	3	4	5	6	M
Family Opheliidae							
Ophelia sp.	+						
Ophelia bicornis						x	
Ophelia denticulata			x				
Ophelina sp.				x			
Ophelina abranchiata				offshore			
Ophelina acuminata	x	x	x	x	x	x	x
Travisia sp.	+						
Travisia carnea						x	
Order Sternaspida							
Family Sternaspidae							
Sternaspis sp.		x		x			
Sternaspis scutata	x	x	x	x	+	x	x
Order Spionida							
Family Spionidae							
Dispio ucinata	x						
Laonice cirrata	x	x		x		+	
Polydora sp.	x	x	x	x	x	x	x
Polydora aggregata		x	x		x		
Polydora caulleryi		x		x			
*Polydora ciliata**	x	x		x	x	x	x
Polydora commensalis		x	x				x
Polydora concharum	+		x		+	+	
Polydora gracilis	x				+	+	
*Polydora ligni**	x	x	x	x	x	x	

*Rasmussen equates *P. ligni* to *P. ciliata*

	1	2	3	4	5	6	M
Polydora quadrilobata		x	x	x	+	x	
Polydora socialis	x	x	x				
Polydora websteri		x	x	x	+		
Prionospio sp.	x	x	x				x
Prionospio ehlersi	x						
Prionospio malmgreni		x		x			
Prionospio pygmaea		x					
Prionospio steenstrupi	x	x		x		x	
Prionospio treadwelli	x						
Pygospio sp.				x			
Pygospio elegans	x	x	x	x	x	x	x
Scolescolepides sp.	x						
Scolecolepis viridis	x	x	x	x		x	x
Scolelepis sp.	x						x
Scolelepis squamata		x	x	x	x	x	x
Spio sp.	x				+	x	x
Spio filicornis	x		x	x		x	x
Spio limicola		x					
Spio pettiboneae	x						
Spio setosa	x	x	x	x	x	x	x
Spiophanes sp.				x			
Spiophanes bombyx	x	x	x	x			x
Spiophanes kroyeri			offshore				
Spiophanes wigleyi		x					
Streblospio benedicti	x	x	x	x		+	x

	1	2	3	4	5	6	M
Family Acrocirridae							
Macrochaeta sp.						+	
Macrochaeta sexoculata						+	
Family Trochochaetidae							
Trochochaeta multisetosa				x			
Trochochaeta watsoni				offshore			
Family Paraonidae							
Aricidea sp.		x	x	x		x	
Aricidea albatrossae		x					
Aricidea jeffreysii	x	x		x		x	
Aricidea quadrilobata	x	x				+	
Aricidea suecica	x	x	x	x		+	
Paraonis sp.	x	x				x	
Paraonis fulgens		x	x	x	x	x	x
Paraonis gracilis	x	x	x	x		x	
Paraonis lyra	x						
Family Apistobranchidae							
Apistobranchus tullbergi		x		x		+	
Family Chaetopteridae							
Chaetopterus sp.				x			
Spiochaetopterus sp.	x						
Order Eunicida							
Family Onuphidae							
Hyalinoecia tubicola					+		
Onuphis conchylega	+	+				+	

	1	2	3	4	5	6	M
Onuphis opalina	+						
Onuphis quadricuspis							x
Family Eunicidae							
Eunice sp.						+	
Eunice pennata	x					x	
Eunice schemacephala					x		
Marphysa sanguinea	x						
Family Lumbrinereidae							
Lumbrineris sp.		x	x		x	x	
Lumbrineris acuta		x					
Lumbrineris brevipes	x	x	x	x			x
Lumbrineris coccinea		x		x			
Lumbrineris fragilis	x	x	x	x	+	x	
Lumbrineris impatiens			offshore				
Lumbrineris latreilli	x			x			
Lumbrineris tenuis	x	x	x	x	+	x	
Lumbrineris tetraura		x					
Ninoe nigripes	x	x	x	x	x	x	x
Family Arabellidae							
Arabella iricolor			x	x	+		
Drilonereis sp.				x			
Drilonereis longa	x	x		x			
Drilonereis magna	x				x	x	
Family Dorvilleidae							
Protodorvillea kefersteini		x					

	1	2	3	4	5	6	M
Protodorvillea minuta			offshore				
Stauronereis caecus		x	x				
Stauronereis rudolphi			x				
Order Amphinomida							
Family Amphinomidae							
Paramphinome Jeffreysii			offshore				
Paramphinome pulchella			offshore				
Pareurythoe borealis				x			
Family Euphrosinidae							
Euphrosine armadillo			x				
Euphrosine borealis	+					+	x
Family Spintheridae							
Spinther citrinus	+					+	
Spinther miniaceus					+		
Order Ariciida							
Family Orbiniidae							
Haploscaloplos foliosus	x						
Naineris quadricuspida	x	x		x	+	x	x
Orbinia sp.	x			x		x	x
Orbinia ornata					x		x
Orbinia swani		x					x
Scoloplos sp.	x	x	x	x	x	x	x
Scoloplos acutus	x	x	x	x	x	x	x
Scoloplos armiger	x	x		x	+	+	
Scoloplos fragilis	x	x			+	x	x

	1	2	3	4	5	6	M
Scoloplos riseri	x						
Scoloplos robustus	x	x	x	x	+	x	x
Order Cirratulida							
Family Cirratulidae							
Caulleriella sp.*			x				
Chaetozone sp.		x					
Chaetozone setosa	+	x		x		+	
Cirratulus sp.		x	x				
Cirratulus cirratus	x	x	x	x	x	x	x
Cirratulus grandis			x	x			x
Cossura sp.		x		x			
Cossura laeviseta		x					
Cossura longocirrata	x			x		+	
Dodecaceria concharum	x				+	+	
Dodecaceria coralii		x	x	x			x
Tharyx sp.	x	x			x		
Tharyx acutus	x	x	x	x		x	x
Tharyx marioni				offshore			
Tharyx similis						+	
Order Oweniida							
Family Oweniidae							
Myriochele sp.				x			
Myriochele heeri	x	x	x	x		x	
Owenia sp.	x						
Owenia artifex **					x		

*may be *Tharyx acutus*

**Hartman (1944) says this species is synonymous with *O. fusiformis*

	1	2	3	4	5	6	M	
Owenia fusiformis	x	x	x			x		
Order Terebellida								
Family Pectinariidae								
Pectinaria sp.		x		x		x		
Pectinaria gouldii	x	x	x	x	x	x	x	
Pectinaria granulata	+	x	x	x	x	x		
Pectinaria hyperborea		x		x	x			
Family Ampharetidae								
Amage auricula	+				+			
Amage tumida				offshore				
Ampharete sp.	+	x	x	x			x	
Ampharete acutifrons	x	x	x	x		+	x	
Ampharete arctica	x	x	x	x				
Amphicteis floridus		x						
Amphicteis gunneri	x	x		x				
Anobothrus gracilis	x	x	x	x	x			
Asabellides oculata	x	x		x				
Glyphanostomum sp.				offshore				
Hypaniola grayi		x	x	x				(estuarine)
Melinna cristata	+	x		x	+	+		
Melinna elisabethae		x	x					
Melinna maculata		x						
Sabellides sp.	+	x	x		+			
Sabellides octocirrata	x					+		
Sabellides pusilla					+			
Samytha sexcirrata	x							

	1	2	3	4	5	6	M
Samythella elongata	x			x			x
Family Terebellidae							
Amphitrite sp.		x			x		x
Amphitrite affinis	+				x	x	
Amphitrite cirrata	+				x	x	
Amphitrite groenlandica	+	+					
Amphitrite johnstoni	x	x	x	x	x	x	x
Amphitrite ornata						x	x
Artacama proboscidea						+	
Enoplobranchus sanguineus					x	x	x
Loimia sp.					x		
Nicolea sp.					x		
Nicolea venustula	x		x				x
Nicolea zostericola					x		
Pista cristata	+				x		
Pista maculata	x	+		x		+	
Pista palmata		x					x
Polycirrus sp.	x	x	x		x	x	
Polycirrus eximius		x			+	x	
Polycirrus medusa		x				+	
Polycirrus phosphoreus	+				+	+	
Streblosoma spiralis	+						
Terebellides sp.					+		
Terebellides stroemi	x	x	x	x	+	+	
Thelepus cincinnatus	+	+	x	x	+	x	x

	1	2	3	4	5	6	M
Trichobranchus glacialis	x	x		x		+	
Trichobranchus roseus		x					
Order Flabelligerida							
Family Flabelligeridae							
Brada sp.	+						
Brada granosa	+				+	x	
Brada inhabilis						+	
Brada setosa						x	
Brada villosa		x	x			x	
Diplocirrus hirsutus	x	x	x	x			
Diplocirrus longisetosus		x					
Flabelligera affinis	+	x		x		x	
Flabelligera grubei						+	
Pherusa sp.			x		x		
Pherusa affinis	x	x	x	x	x	x	
Pherusa arenosa			x				
Pherusa aspersa	+	+				+	
Pherusa ehlersi		x					
Pherusa plumosa	x	x		x	x	x	x
Therochaeta sp.			x				
Zorus sarsi						+	
Order Sabellida							
Family Sabellidae							
Amphiglena c.f. mediterranea	x						
Chone sp.	+	x					

	1	2	3	4	5	6	M	
Chone duneri		x						
Chone infundibuliformis	x	x		x				
Euchone sp.				offshore				
Euchone elegans	x				+			
Euchone rubrocincta	x	x		x				
Fabricia sabella	x	x	x		x	x	x	
Fabriciola sp.		x						
Laonome kroyeri	x							
Manayunkia sp.		x		x				(estuarine)
Myxicola sp.					+			
Myxicola infundibulum		x	x	x	x	x	x	
Myxicola steenstrupi	+	+				+		
Potamilla sp.		x	x					(esruarine)
Potamilla neglecta	x	x		x			x	
Potamilla reniformis	x	x	x		x	x	x	
Sabella sp.						+		
Sabella crassicornis			x		+	x	x	
Sabella microphthalma	x							
Sabella zonalis	+							
Family Serpulidae								
Chitinopoma serrula	+	+						
Filograna implexa	+				x	+		
Hydroides sp.					+		x	
Hydroides dianthus			x			x		
Pomatoceros triqueter					+			
Protula media	+							

	1	2	3	4	5	6	M
Spirorbis sp.	x					x	x
Spirorbis borealis	x	x	x	x	x	x	x
Spirorbis granulatus					x		
Spirorbis quadrangularis	+						
Spirorbis spirorbis					+		+
Spirorbis spirillum			x	x	x	x	x
Spirorbis violaceus					x		x
Family unknown							
**Oterlia* sp.	+						

	Regions						
	1	2	3	4	5	6	M
Class Oligochaeta*							
Order Plesiopora							
Family Naididae							
Family Tubificidae							
Clitellio sp.						x	
Clitellio arenarius	x	x	x	x	x	x	x
Peloscolex benedini	+				+		x
Tubifex longipenis		x					
Family Enchytraeidae							
Enchytraeus albidus					+		
Lumbricillus sp.					+		
Lumbricillus lineatus	+						
Class Hirudinea							
Order Rhychobdellae							
Family Piscicolidae							
Johanssonia sp.							x
Oceanobdella sp.							x
Pisciola sp.	+						
Pisciola punctata		x					
Piscicola rapax			x				x
Platydella sp.				x			
Pontobdella sp.	+						
Trachelobdella sp.			x				

* oligochaetes are ubiquitous along the whole Maine coast. Speciation is difficult (particularly in the family Enchytraeidae) and many more species than those listed above are believed to occur.

	Regions						
	1	2	3	4	5	6	M
PHYLUM SIPUNCULA							
Golfingia sp.	+						
Golfingia eremita	+				+		+
Gilfingia minuta			x		+		x
Golfingia procera	x						
Phascolion sp.	+						
Phascolion strombi	x	x	x		x	x	x
Phascolopsis sp.	+						
Phascolopsis gouldii	+	x	x		+	x	x
PHYLUM ECHIURIDA							
Echiurus echiurus					x		
PHYLUM ARTHROPODA							
Subphylum Pycnogonida							
Class Pantopoda							
Family Nymphonidae							
Nymphon sp.	+	x					x
Nymphon grossipes	+		x		x	+	+
Nymphon hirtipes						x	
Nymphon longitarse	+		+				x
Nymphon macrum		x	+				
Nymphon rubrum				x	+		
Nymphon stromi	+					+	x
Family Ammotheidae							
Achelia scabra	+				x		

	REGIONS						
	1	2	3	4	5	6	M
Achelia spinosa	+	x	x		x	x	
Family Tanystylidae							
Tanystylum orbiculare						x	x
Family Phoxichilidiidae							
Anoplodactylus sp.					+		
Anoplodactylus lentus		x				x	x
Phoxichilidium sp.					x	x	
Phoxichilidium femoratum	+	x	x		x	x	x
Family Pycnogonidae							
Pycnogonum littorale	x				x	x	+
Family Pallenidae							
Callipallene sp.	+				+		
Callipallene brevirostris			x				
Pseudopallene circularis					+	+	
Subphylum Chelicerata							
Class Merostomata							
Order Xiphosurida							
Family Limulidae							
Limulus polyphemus	x	x	x		x		
Class Arachnida							
Order Pseudoscorpionida							
Family Chthoniidae							
Chthonius tetrachelatus	x			x	x		x
Order Acari							
Family Halacaridae							
Halacarus sp.	x	x	x	x	x	x	x

	1	2	3	4	5	6	M
Subphylum Mandibulata							
Class Crustacea							
Subclass Ostracoda							
Order Myodocopida							
Loxoconcha sp.						x	
Sarsiella zostericola		x	x				
Subclass Branchiura							
Argulus sp.	+						
Argulus funduli	+				x		
Subclass Cirripedia							
Order Thoracica							
Suborder Lepadomorpha							
Family Lepadidae							
Conchoderma virgatum					x		
Lepas sp.			x				
Lepas anatifera					x	x	
Lepas fascicularis	+		x		+	x	x
Suborder Balanomorpha							
Family Chthamalidae							
Chathamalus fragilis				x			
Family Balanidae							
Balanus sp.		x	x	x	x		
Balanus amphitrite						x	
Balanus balanoides	x	x	x	x	x	x	x
Balanus balanus	x	x	x	x	x	x	x
Balanus crenatus	x	x	x	x	x	x	x
Balanus eburneus	+				+	x	x

	1	2	3	4	5	6	M
Balanus hameri		x	x				x
Balanus improvisus		x	x	x		x	
Family Peltogastridae							
Peltogaster sp.					x		
Peltogaster paguri	+				+	+	
Subclass Malacostraca							
Series Leptostraca							
Superorder Phyllocarida							
Order Nebaliacea							
Nebalia bipes							x
Series Eumalacostraca							
Superorder Peracardia							
Order Cumacea							
Family Bodotriidae							
Cyclaspis varians		x					
Mancocuma stellifera		x				x	x
Leptocuma minor	x	x	x		x		
Family Leuconidae							
Eudorella sp.		x	x				
Eudorella difficilis					+		
Eudorella emarginata	x	x	x	x			
Eudorella hispida	+	x					
Eudorella pusilla	+	x	x				
Eudorella truncatula	x	x		x		x	
Eudorellopis deformis			x				

	1	2	3	4	5	6	M
Leucon americanus		x	x				
Leucon nasicoides		x				+	x
Family Nannastacidae							
Campylaspis rubicunda	+	x					
Family Lampropidae							
Lamprops quadriplicata	+						
Family Diastylidae							
Diastylis sp.	x	x	x	x	x	x	
Diastylis abbreviatus	+						
Diastylis cornuifer					+		
Diastylis lucifera						+	
Diastylis polita	x	x	x	x	x		
Diastylis quadrispinosa	x	x	x	x	x	x	x
Diastylis sculpta	x	x	x	x	x	+	
Leptostylis ampullacea	x	x					
Leptostylis longimana	+	x					
Oxyurostylis smithi		x	x	x			x
Family Pseudocumidae							
Petalosarsia declivis		x					
Order Tanaidacea							
Family Paratanaidae							
Leptochelia sp.	x						
Leptochelia rapax	x	x	x		+		
Leptochelia savignyi		x					
Leptognatha sp.	x						
Leptognatha caeca	x						

	1	2	3	4	5	6	M	
Order Isopoda								
Suborder Gnathiidea								
Family Gnathiidae								
Gnathia sp.				x	+	x		
Gnathia cerina	+	+				+		
Suborder Anthuridea								
Family Anthuridae								
Calthura branchiata	+	x			+	+		
Cyathura sp.		x					x	
Cyathura polita	x	x	x	x	+			(principally estuarine)
Ptilanthura sp.	+							
Ptilanthura tenuis	x	x		x		x		
Suborder Flabellifera								
Family Cirolanidae								
Cirolana borealis				offshore				
Cirolana concharum		x				x		
Cirolana polita				x		+		
Family Aegidae								
Aega psora			+					
Family Cymothoidae								
Ceratothoa impressa					+			
Rocinela americana					+			
Family Limnoridae								
Limnoria sp.							x	
Limnoria lignorum	x	x	x		x		x	

	1	2	3	4	5	6	M
Suborder Valvifera							
Family Idoteidae							
Chiridotea coeca	x	x		x		x	x
Chiridotea tuftsi	+	x	x	x	x	x	x
Edotea sp.				x		x	
Edotea montosa	x	x		x	x	x	
Edotea triloba	x	x	x	x	x	x	x
Erichsonella attenuata	x						
Erichsonella filiformis	+						
Idotea sp.	x	x		x			
Idotea baltica	x	x	x	x	x	x	x
Idotea metallica			+		x		
Idotea phosphorea	x	x	x	x	x	x	x
Suborder Asellota							
Family Janiridae							
Jaera spp.*	x	x	x	x	x	x	x
Janira alta	+					+	
Family Munnidae							
Munna sp.	+						
Munna fabricii	+				x	+	
Pleurogonium inerme					+		
Pleurogonium rubicundum					+		
Pleurogonium spinossisum		x					
Family Desmosomatidae							
Desmosoma lobiceps					+		

*There are several species included -- was formerly reported as either *J. marina*, *J. albifrons* or *J. copiosa*.

	1	2	3	4	5	6	M
Suborder Epicaridea							
Family Bopyridae							
Bopyroides hippolytes	+				+	+	
Hemiarthrus abdominalis	+				+		
Suborder Onoscoidea							
Family Oniscidae							
Philoscia vittata			x			x	x
Family Ligididae							
Ligia oceanica							x
Scyphacella arenicola				x			
Order Amphipoda							
Suborder Hyperiidea							
Family Hyperiidae							
Hyperia galba					x	x	
Hyperia medusarum	+				+		
Parathemisto bispinosa			offshore				
Parathemisto compressa					+	x	
Suborder Gammaridea							
Family Acanthonotozomatidae							
Acanthonotozoma serratum	+				+		
Family Ampeliscidae							
Ampelisca sp.	x	x	x	x			
Ampelisca abdita	x	x	x	x	x		x
Ampelisca agassizi		x	x				
Ampelisca declivitatus			offshore				
Ampelisca macrocephala	x	x		x	x	x	

	1	2	3	4	5	6	M
Ampelisca spinipes		x		x			
Ampelisca vadorum	x	x		x		x	
Byblis sp.		x					
Byblis gaimardi	+	x				x	
Byblis serrata	x		x	x			
Haploops sp.	+						
Haploops tubicola	x	x		x			
Family Ampithoidae							
Ampithoe sp.	+			x	+		
Ampithoe longimana					x		x
Ampithoe rubricata	x	x	x	x	x	x	x
Ampithoe valida			x				
Cymadusa compta				x			
Family Aoridae							
Microdentopus gryllotalpa				x			x
Family Argissidae							
Argissa sp.				x			
Argissa hamatipes	x	x					
Argissa typica		x					
Family Calliopidae							
Calliopus sp.	x						
Calliopius laeviusculus	x	x	x	x	x	x	x
Halirages fulvocinctus					+		
Family Corophiidae							
Corophium sp.	x	x	x	x	x	x	

	1	2	3	4	5	6	M	
Corophium acherusicum			x					
Corophium bonelli		x	x	x	+	x		
Corophium crassicorne	x	x		x	+			
Corophium insidiosm	x	x	x	x	x		x	
Corophium lacustre		x		x				(estuarine)
Corophium volutator	x	x	x	x	x		x	
Erichthonius sp.			offshore					
Erichthonius difformis	+				x	x		
Erichthonius rubricornis	x	x	x	x	x	x	x	
Unciola sp.		x	x		x			
Unciola irrorata	x	x	x	x	x	x	x	
Unciola inermis					x			
Family Dexaminidae								
Dexamine thea	x	x		x	x	x		
Family Eusiridae								
Rachotropis inflata					+			
Rachotropis oculata		x						
Family Gammaridae								
Casco bigelowi	x	x		x	+	x		
Dikerogammarus sp.				x				
Dikerogammarus fasciatus					+			(estuarine)
Eulimnogammarus obtusatus	x	x	x	x	x		x	
Gammarellus angulosus	x	x	x		x	x	x	
Gammarellus homari							x	
Gammarus sp.		x	x	x	x	x	x	
Gammarus annulatus		x	x		x	x	x	
Gammarus duebeni				x	x			

	1	2	3	4	5	6	M	
Gammarus lawrencianus	x	x		x	x	x	x	
*Gammarus locusta**	x	x		x	+	x	x	
Gammarus mucronatus	x	x	x	x	x	x	x	
Gammarus oceanicus	x	x	x	x	x	x	x	
Gammarus palustris	x	x		x			x	(principally estuarine)
Gammarus setosus	x			x	x	x		
Gammarus tigrinus		x		x	x			(estuarine)
Maera danae	+	x		x	x	x		
Maera loveni		x						
Marinogammarus sp.						x		
Marinogammarus finmarchicus	x	x		x	x	x	x	
Marinogammarus stoerensis	x	x			x	x	x	
Melita sp.		x	x					
Melita dentata	x	x		x	+	x		
Melita nitida		x	x				x	(principally estuarine)
Family Haustoriidae								
Acanthohaustorius millsi		x					x	
Amphiporeia lawrenciana					x	x		
Amphiporeia virginiana		x		x			x	
Bathyporeia quoddyensis							x	
Haustorius sp.			x					
Haustorius arenarius		x					x	
Haustorius canadensis	x	x					x	
Pontoporeia sp.	x		x					
Pontoporeia femorata		x		x	+			
Protohaustorius deichmannae							x	

*G. locusta group as defined by Stock, 1967

	1	2	3	4	5	6	M
Family Hyalidae							
Hyale sp.			x				
Hyale nilssoni	x	x	x	x	x	x	x
Hyale plumulosa	x			x			
Family Ischyroceridae							
Ischyrocerus anguipes	x	x			x	x	
Jassa sp.			x			x	x
Jassa falcata	x	x	x	x			x
Family Lafystiidae							
Lafystius sturionis	+				+		
Family Lysianassidae							
Anonyx compactus	x						
Anonyx lilljebori		x				x	
Anonyx nugax				x	+	x	
Anonyx sarsi		x					
Hippomedon sp.			offshore				
Hippomedon propingus	x	x					
Hippomedon serratus		x			+	x	
Lysianopsis alba				x			
Orchomonella sp.				x			
Orchomonella groenlandica					+		
Orchomonella minuta	x	x	x	x	x	x	
Orchomonella pinguis		x	x	x	+	x	x
Psammonyx nobilis		x	x	x	x	x	x
Family Melphidippidae							
Melphidippa goesi						+	
Family Oedicerotidae							
Bathymedon obtusifrons		x					

	1	2	3	4	5	6	M
Monoculodes sp.	+	x	x	x			
Monoculodes edwardsi		x			+		
Monoculodes intermedius		x				x	
Monoculodes packardi		x					
Monoculodes tessellatus		x					
Monoculodes tuberculatus		x					
Oediceros sp.		x	x				
Paroediceros lynceus	+	x				+	
Synchelidium armericanum							x
Family Paramphithoidae							
Epimeria loricata						+	
Paramphithoe sp.		x					
Paramphithoe cuspidata	+					+	
Paramphithoe pulchella	+						
Family Pardalisidae							
Halice sp.			offshore				
Family Photidae							
Leptocheirus plumulosus			x				
Leptocheirus pinguis	x	x	x	x	x	x	
Photis sp.	x					x	
Photis macrocoxa	x	x		x			
Photis reinhardi	x	x			+		
Podoceropsis sp.				x			
Podoceropsis nitida						+	
Family Phoxocephalidae							
Harpinia sp.		x	x			x	

	1	2	3	4	5	6	M
Harpinia laevis					+		
Harpinia plumosa	+				+		
Harpinia propinqua	x	x	x	x		x	
Paraphoxus spinosus				x			
Phoxocephalus sp.				x			
Phoxocephalsus holbolli	x	x	x	x	x	x	x
Family Pleustidae							
Neopleustes pulchellus	+						
Pleustes cataphractus	+						
Pleustes panoplus	+				+	+	
Pleusymtes sp.		x					
Pleusymtes glaber		x		x		+	
Stenopleustes gracilis		x					
Stenopleustes inermis	x	x		x		x	
Family Podoceridae							
Dulichia sp.	+	x					
Dulichia falcata					+		
Dulichia monacantha	x	x					
Dulichia porrecta		x	x	x	x	+	
Paradulichia secunda					+		
Paradulichia typica		x					
Family Pontogeneiidae							
Pontogeneia inermis	+	x	x		x		
Family Stegocephalidae							
Stegocephalus inflatus				x		+	
Family Stenothoidae							

	1	2	3	4	5	6	M
Metopa sp.	+	+					
Metopa boecki		x					
Metopa bruzeli		x					
Metopa groenlandica					+	+	
Metopella augusta		x					
Metopella carinata					+		
Metopella nasuta		x					
Stenothoe sp.		x	x				
Family Talitridae							
Orchestia sp.	x						
Orchestia gammarella	x					x	
Orchestia grillus	x		x				
Orchestia plantensis	x	x	x	x	x	x	x
Orchestia uhleri	x						x
Talorchestia longicornis			x	x	+		
Talorchestia megalophthalma	+	x			+	x	x
Family Tironidae							
Syrrhoe crenulata	x	x			x	x	
Tiron spiniferum		x					
Suborder Caprellidea							
Family Caprellidae							
Aeginella longicornis	x	x	x	x	x	x	x
Caprella sp.	+	x	x				
Caprella equilibra					+		
Caprella linearis	+	x	x		x	x	x
Caprella penantis	x		x		+	x	
Caprella septentrionalis	+					x	x

	1	2	3	4	5	6	M
Caprella unica	x					x	
Laconacia sp.				x			
Mayerella limicola	x	x			+		
Paracaprella tenius		x		x			
Order Mysidacea							
Family Mysidae							
Erythrops erythropthalma		x		x	x		
Heteromysis formosa			x				
Meterythrops robustus	x	x		x			
Mysis sp.	x				x		
Mysis gaspensis					x	x	
Mysis mixta	+	+			+	x	
Mysis stenolepsis	+		x	x	x	x	x
Neomysis americana	x	x	x	x	x	x	
Paunus flexuosus		x	x	x	x	x	x
Pseudomma roseum			offshore				
Superorder Eucarida							
Order Euphausiacea							
Family Euphausiidae							
Meganyctiphanes sp.	x					x	
Meganyctiphanes norvegica	+					x	x
Order Decapoda							
Infraorder Penaeidea							
Family Penaeidae							
Parapeneus longirostris				x			
Family Sergestidae							

	1	2	3	4	5	6	M
Lucifer faxoni							x
Infraorder Caridea							
Family Palaemonidae							
Palaemonetes pugio	x					x	
Palaemonetes vulgaris						x	
Family Hippolytidae							
Caridion gordoni	+						
Eualus fabricii	+		x		x	x	x
Eualus gaimardii	+		x	x	x	x	
Eualus pusiolus	x	x		x	x	x	x
Lebbeus groenlandicus	+	+	x		x	x	x
Lebbeus polaris	+	+			+	x	
Lebbeus zebra					x	x	
Spirontocaris liljeborgi	+				x		+
Spirontocaris phippsii	+					x	
Spirontocaris spinus	x		x		x	x	
Family Pandalidae							
Dichelopandalus leptocerus	+						
Pandalus borealis	x	x		x	x		x
Pandalus montagui	+	+		x	x	x	
Family Crangonidae							
Crangon septemspinosa	x	x	x	x	x	x	x
Pontophilus norvegica						x	
Sclerocrangon boreas	+				+	x	
Sabinea sarsii						x	+
Sabinea septemcarinata	+						+
Infraorder Astacidea							
Family Nephropsidae							

	1	2	3	4	5	6	M
Homarus americanus	x	x	x	x	x	x	x
Infraorder Anomura							
Superfamily Thalassinoidea							
Family Axiidae							
Axius serratus	x						
Calocaris templemani			offshore				
Superfamily Paguroidea							
Family Paguridae							
Pagurus sp.				x	x	x	x
Pagurus acadianus	+	x	x	x	x	x	x
Pagarus arcuatus		x		x	x	x	x
Pagurus longicarpus	x		x		x	x	x
Pagurus pollicaris				x		x	x
Pugurus pubescens	+	+	x	x	x	x	x
Family Lithodidae							
Lithodes maia	+		x		+		x
Infraorder Brachyura							
Section Oxyrhyncha							
Family Majidae							
Chionoectes opilio	+						
Hyas sp.				x			
Hyas araneus	+	x	x	x	x	x	x
Hyas coarctatus	+	+	+	x	x	x	x
Libinia sp.						x	
Libinia dubia		x				x	x
Libinia emarginata	+				x	x	

	1	2	3	4	5	6	M
Section Cancridea							
Family Cancridae							
Cancer borealis	x	x	x	x	x	x	x
Cancer irroratus	x	x	x	x	x	x	x
Section Branchyrhyncha							
Family Portunidae							
Callinectes sapidus	x	x	x	x			x
Carcinus maenas	x	x	x	x	x	x	x
Ovalipes ocellatus							x
Family Xanthidae							
Neopanope sayi		x			x		
Rhithropanopeus harrisii		x					x
Family Geryonidae							
Geryon quinquedens	+						x
Family Grapsidae							
Planes minutus							x
Class Insecta							
Subclass Aptergcota							
Order Collembola							
Anurida maritima	x	x	x	x	x		x

PHYLUM ECHINODERMATA

	1	2	3	4	5	6	M
Class Crinoidea							
Order Articulata							
Family Antedonidae							
Hathrometra sarsi			offshore				
Class Holothuroidea							
Order Dendrochirotida							
Family Psolidae							
Psolus fabricii	x		x	x	x	x	x
Psolus phantapus	+			x	+	x	+
Psolus valvatus	x						
Family Phyllophoridae							
Havelockia scabra	+	x	x	x			
Pentamera calcigera	+			x			
Pentamera pulcherrima		x			+		+
Thyonidium sp.	+						
Thyonidium pellucidum	+						
Family Sclerodactylidae							
Sclerodactyla briareus		x					
Family Cucumariidae							
Cucumaria sp.						x	x
Cucumaria assimilis	+						
Cucumaria frondosa	x	x	x	x	x	x	x
Cucumaria minuta	+					+	
Pentacta calcarea	+						
Phyllophorus communis	+					+	
Stereoderma unisemita	+				x		

	1	2	3	4	5	6	M
Order Apodida							
Family Synapidae							
Leptosynapta sp.					x	x	
Leptosynapta inhaerens					+		
Leptosynapta roseola					+	x	
Family Chiridotidae							
Chiridota laevis			x		x	x	
Order Molpadiida							
Family Molpadiidae							
Molpadia oolitica	+	x		x	+		
Molpadia turgida	+						
Family Caudinidae							
Caudina arenata	x		x	x			x
Class Echinoidea							
Order Echinoida							
Family Strongylocentrotidae							
Strongylocentrotus droebachiensis	x	x	x	x	x	x	x
Order Clypeasteroida							
Family Echinarachnidae							
Echinarachnius parma	x	x	x	x	x	x	x
Order Spatangoida							
Family Schizasteridae							
Brisaster fragilis	+						
Class Stelleroidea							
Subclass Asteroidea							
Order Paxillosida							
Family Astropectinidae							
Leptychaster arcticus			offshore				

	1	2	3	4	5	6	M
Family Goniopectinidae							
Ctenodiscus crispatus	x	x	x	x	+	x	x
Order Valvatida							
Family Goniasteridae							
Hippasteria phrygiana	+					x	x
Order Spinulosida							
Family Solasteridae							
Solaster endeca	x	+	x	x	x	x	x
Solaster papposus	+	x			+	x	x
Family Pterasteridae							
Pteraster militaris	+					x	
Pteraster pulvillus						x	+
Family Asterinidae							
Asterina sp.			offshore				
Family Poraniidae							
Porania insignis							x
Family Echinasteridae							
Cribrella pactinata						+	
Henricia ssp. (*sanguinolenta*)	x	x	x	x	x	x	x
Order Forcipulatida							
Family Asteriidae							
Asterias sp.	x			x	x	x	
Asterias forbesii	x	x	x	x	x	x	x
Asterias vulgaris	x	x	x	x	x	x	x
Leptasterias sp.	+					x	

	1	2	3	4	5	6	M
Leptasterias austera							x
Leptasterias littoralis	+					x	
Leptasterias mulleri						x	x
Leptasterias tenera	+	+			x	x	x
Stephanasterias albula	+	+				x	
Subclass Ophiuroidea							
Order Phrynophiurida							
Family Gorgonocephalida							
Gorgonocephalus arcticus		x			+	x	
Order Ophiurida							
Family Ophiuridae							
Ophiolepis hispida	+						
Ophiura sp.			x				
Ophiura robusta	+	x			+	x	x
Ophiura sarsi	+		x			+	x
Family Ophiodermatidae							
Ophioderma brevispinum					+		
Family Ophiacanthidae							
Ophiacantha affinis	+						
Ophiacantha bidentata	+	+				+	
Ophiomitrella clavigera	x						
Family Ophiactidae							
Ophiopholis aculeata	x	x	x	x	x	x	x
Family Amphiuridae							
Amphipholis torelli			offshore				
Amphiura otteri			offshore				
Axiognathus squamata	x	x	x	x	x	x	x

	Regions						
	1	2	3	4	5	6	M
PHYLUM HEMICHORDATA							
Class Enteropneusta							
Family Harrimaniidae							
Saccoglossus kowalewskii		x	x	x	x	x	x
Stereobalanus canadensis		x		x	x		
PHYLUM CHORDATA							
Class Ascidiacea							
Order Enterogona							
Suborder Aplousobranchia							
Family Clavelinidae							
Distaplia clavata						+	
Family Polyclinidae							
Amaroucium sp.		x		x		x	x
Amaroucium constellatum							x
Amaroucium glabrum	+	+			x	x	x
Amaroucium pallidum	+	+			x	+	+
Amaroucium pellucidum			x				
Ammourcium stellatum			x			x	x
Syniocum pulmonaria					+		
Family Didemnidae							
Didemnum albidum	+	x	x	x	x	x	x
Didemnum candidum	+				+	x	
Lissoclinum sp.	+	+					

	Regions						
	1	2	3	4	5	6	M
Lissoclinum aureum	+					+	
Trididemnum tenerum	+					+	
Suborder Phlebobranchia							
Family Cionidae							
Ciona intestinalis	x					x	+
Family Corellidae							
Chelyosoma macleayanum	+						
Family Ascidiidae							
Ascidia callosa	+		x		x	x	x
Ascidia obliqua	+						+
Ascidia prunum	+					x	
Order Pleuregona							
Suborder Stolidobranchiata							
Family Styelidae							
Botrylloides aureum	+						+
Botryllus sp.	x						
Botryllus schlosseri		x	x			x	x
Cnemidocarpa mollis	+	+					
Dendrodoa carnea	+	x	x	x	x	x	x
Dendrodoa grossularia						+	
Dendrodea pulchella	+					+	
Polycarpa fibrosa	+				x		
Styela corciacea	+					+	
Styela partita		x			x	x	
Family Pryuidae							
Boltenia sp.				x			
Boltenia echinata	+	x	x		x	x	x

	Regions						
	1	2	3	4	5	6	M
Boletenia ovifera	x		x		x	x	x
Halocynthia pyriformis	+		x		x	x	x
Family Molgulidae							
Bostrichobranchus pilularis	x	x	x	x	x	+	
Mogula sp.	x	x	x	x		x	x
Mogula arenata		x				x	
Mogula citrina	+			x	x	+	x
Mogula complanata	x			x	x	x	
Mogula manhattensis	+	x			x	x	x
Mogula provisionis					x		
Mogula retortiformis	+				x	x	x
Mogula siphonalis	+	+			x		

APPENDIX F

Seasonal Abundances and Reproductive Patterns of Zooplankton in Maine Waters

Eleven species of copepods and nine groups of meroplanktonic species are discussed below, in terms of seasonal abundance and times of reproduction. Some species, such as Eurytemora herdmani and Acartia tonsa, are not dominant in the coastal waters of Maine; however, because of the dominance of these species in estuaries, it is necessary to include them in this section for the sake of comparison. Meroplanktonic forms addressed are either (1) dominant (i.e., abundant), (2) important to the benthic population (i.e., barnacles, molluscs, or polychaetes), or (3) important predators (i.e., coelenterates of Sagitta elegans).

1.) Calanus finmarchicus

Although Calanus finmarchicus is the most abundant species in the Gulf of Maine, C. finmarchicus was not abundant in Penobscot Bay and the maximum in population occurs in late summer and late fall (Bertrand 1977). This species decreased in numbers toward the upper bay (Bertrand 1977), which indicates that C. finmarchicus is probably carried into the upper bay from coastal waters.

In the Gulf of Maine, Fish (1936) reported that the western stock of this species (C. finmarchicus) had two major broods, which spawned primarily in March-April and in June-July, with perhaps another spawning season in September. In Penobscot Bay, peak abundances of copepodites were observed in winter and summer, which indicates spawning in fall and early summer (Bertrand 1977). Bertrand (1977) feels that the population of C. finmarchicus is probably a result of immigration from the Gulf of Maine combined with localized propagation.

2.) Pseudocalanus minutus

P. minutus is widespread in the temperate region of the northern hemisphere and is nearly as universal as C. finmarchicus in the Gulf of Maine. In the Bay of Fundy and in the Gulf of Maine, P. minutus is second in abundance only to C. finmarchicus (Fish 1936), and Bigelow (1926) suggests that it averages about 11% of the copepod stock and generally was 1/10th to 1/5th as abundant as C. finmarchicus. Pseudocalanus minutus adults in Penobscot Bay exhibit four periods of maximum abundances: midwinter, early spring, late summer and late fall (Bertrand 1977). The largest peak is in late summer.

In Boothbay Harbor, Pseudocalanus minutus is abundant in all seasons; the major peak of abundance occurs in October, with smaller peaks in February, May, and July-August (Sherman 1976). This pattern is similar to the

(Continued)

population in the Gulf of Maine. Four generations of P. minutus appear to occur in Penobscot Bay in fall, winter, spring, and summer (Bertrand 1977). In the upper bay only three generations appear to be present; the summer brood does not appear (Bertrand 1977). Bigelow (1926) found that possibly three to four broods were spawned during the year and that breeding occurred mainly in March-April, May-June, July-August, and September.

3.) Centropages typicus

C. typicus is one of the most abundant copepods during the fall in the central coastal and offshore waters of the Gulf of Maine (Sherman 1970, and Bigelow 1926). This species has been observed in Penobscot Bay in small numbers in late summer and fall to early winter (Bertrand 1926). Sherman (1976) observed a peak of abundance in C. typicus in October and possibly a second peak in May. According to Bigelow (1926) and Deevey (1952), this species is relatively stenohaline, and generally does not survive well when the salinity is lower than 31 o/oo. This may explain its scarcity in Penobscot Bay, which has reduced salinity seasonally, and its presence in Boothbay Harbor, where salinity is consistently high. Bertrand (1977) suggests that the population present in Penobscot Bay consists of migrants from the Gulf of Maine. Other observations in North Atlantic waters show that the timing of its seasonal maximum is not affected by temperature (Clark 1940; Fish 1925). Therefore, C. typicus is abundant in coastal and offshore waters from summer to late winter (Clark 1933).

4.) Centropages hamatus

Centropages hamatus was found in maximum densities in summer in Boothbay Harbor (Sherman 1976) and Penobscot Bay (Bertrand 1977). In the coldest part of the season (January-April) it was absent in Boothbay Harbor (Sherman 1976) and found in very low numbers in Penobscot Bay (Bertrand 1977). In the Gulf of Maine, Bigelow (1926) and Sherman and Schaner (1968) noted that C. hamatus was fairly scarce compared to C. typicus. C. hamatus is thought to be euryhaline and more abundant in relatively shallow waters.

Reproduction of C. hamatus in the Penobscot Bay probably occurs in spring; thus only one generation may be produced per year (Bertrand 1977). Five generations per season for C. hamatus were reported by Marshall (1949) from Clyde Sea area of Scotland. In Block Island Sound only two generations (winter and June-July) were observed by Deevey (1952). The increase in population in the spring may be attributed to low numbers of overwintering adults living near the bottom (Marshall 1949) or possibly a winter dormant egg (Fish and Johnson 1937). Zillious and Gonzolex (1972) and Kasahara et al. (1974) have noted the occurence of overwintering eggs of calanoid copepods from estuarine and nearshore sediments.

5.) Microsetella norvegica

Microsetella norvegica is the most abundant copepod in the Penobscot Bay during late fall and winter (Bertrand 1977). A major breeding period

(Continued)

may occur in late autumn and winter (Bertrand 1977).

In the Gulf of Maine and Bay of Fundy, M. norvegica is an important member of the pelagic population (Fish 1925; Fish and Johnson 1937), although it was not recorded by Bigelow (1926), because of the larger mesh size which he used. Fish (1925) suggests that three to four generations were produced by M. norvegica in the Gulf of Maine between March and September, and spawning probably occurred in late March, late May, July, and mid-September.

6.) Temora longicornis

T. longicornis is most abundant in terms both of numbers and volume in Penobscot Bay in summer and fall, disappearing in winter (Bertrand 1977). In Boothbay Harbor T. longicornis also has a peak abundance in the late summer-early fall, but is found throughout the year (Sherman 1976). His data suggests a continuous breeding cycle from March to December, similar to that of other inshore populations, i.e. Montsweag Bay and the Damariscotta River. Bertrand (1977) suggests that there are four to five generations of T. longicornis in the outer Penobscot Bay (May to October) and two to three generations in the inner bay (August to October). He also feels that some of the population of the outer bay is transported to the inner bay, therefore augmenting the population in the inner bay. No observations on the breeding of T. longicornis have been made for the population in the Gulf of Maine.

Generally, the seasonal maximum of T. longicornis occurs earlier to the southward. In Long Island Sound (Deevey 1956) and Block Island Sound (Deevey 1952) highest numbers were recorded in late spring or early summer, while in the Gulf of Maine (Bigelow 1926) and at Woods Hole (Fish 1925) it was found abundantly during winter. In estuaries and bays along the Maine coast the situation is different from that in the open waters of the Gulf of Maine. The population of T. longicornis in Montsweag Bay, the Damariscotta River, Penobscot Bay, and Boothbay Harbor, was most numerous in the late summer and fall (Lee 1974; McAlice 1971 to 1977; Bertrand 1977). It appears that this euryhaline copepod has seasonal occurrence of maximum density that is dependent to a large extent on temperatures within the range of 57 to 64°F (14 to 18°C) (Bigelow 1926; Deevey 1956; Lee 1947; and, McAlice 1971 to 1977).

7.) Oithona similis

The Oithona population in Boothbay Harbor and Penobscot Bay follows a pattern of abundance somewhat similar to Montsweag Bay and the Damariscotta River estuary (i.e., maximum in late summer and fall). The population is only slightly reduced in summer in the coastal waters where the water temperature is cooler than in Montsweag Bay or the Damariscotta River (Lee 1974; McAlice 1971 to 1977). In the Gulf of Maine, O. similis is predominantly a winter species (Bigelow 1926).

(Continued)

The abundance of nauplii in the samples were generally less than other later developmental stages (Bertrand 1977). This does not reflect the true population structure and perhaps indicates that the Oithona population in Penobscot Bay is recruited from offshore populations, where temperatures are lower and salinity higher than in the estuary (Bertrand 1977). The presence of nauplii at all stations sampled in Penobscot Bay indicates that there is a locally produced generation (Bertrand 1977).

In the western Gulf of Maine, Fish (1936) reported this species as breeding from March to September, and noted that it was a very "fecund" organism with high mortality in the early developmental stages. Three major generations could be recognized there from January to August. Females with eggs were recorded from March through June in Block Island Sound (Deevey 1952). Thus the reproductive periods of this species seem to be associated with the cooler portions of the season.

8.) Acartia sp.

Two species of Acartia, A. longiremis and A. clausi (also known as A. hudsonica; Bradford 1976), are characteristically present in the coastal marine waters of Maine. A third Acartia species, A. tonsa may be present in low abundances in some areas.

A. tonsa was not recorded by Sherman (1976) from the Boothbay Harbor region. The higher salinity of this area probably accounts for the absence of this copepod. However, in upper Penobscot Bay, Bertrand (1977) found this species in low abundance from June through October but copepodites (i.e., young copepods) were not found and it was presumed that propogation took place in the Penobscot River estuary where temperatures are higher and salinity lower.

In Boothbay Harbor A. clausi is the dominant copepod in the summer with a major peak of abundance in July and August, while the less abundant A. longiremis had a July-August peak followed by a comparable peak in November (Sherman 1976). This pattern seems to reflect the Acartia population in the coastal Gulf of Maine waters (Bigelow 1926). In Penobscot Bay, populations of A. clausi followed those described for Boothbay Harbor; however, A. longiremis was only found in the Bay in autumn and early winter (Bertrand 1977). Since no copepod stages were found, Bertrand (1977) suggests that individuals from the automn population peak in the Gulf of Maine immigrate into the Bay.

In the Gulf of Maine, Bigelow (1926) suggested two breeding seasons for A. longiremis; early spring and late summer. Sherman (1968) found a seasonal maximum of A. longiremis in summer in the central coastal area of the Gulf of Maine. In Penobscot Bay, Bertrand (1977) found that there were probably three to four broods of A. clausi per year. Bertrand (1977) states that there are apparently four generations in the upper bay and three in the lower bay. He feels that occurrence of a fourth generation in the upper bay in the summer may be due to the higher temperatures and more food available to developmental stages in this area.

(Continued)

9.) Eurytemora herdmani

Bigelow (1926) found E. herdmani to be scarce in the Gulf of Maine and suggested that this species did not breed successfully seaward of the outer headlands. However, Sherman (1970) found that it was generally present all year in coastal Gulf of Maine waters and in the late summer-early fall in Boothbay Harbor (Sherman 1976). This species is also one of the most abundant copepods in Passamaquoddy Bay (Fish and Johnson 1937). In Penobscot Bay, numbers of E. herdmani decrease towards the outer bay, which indicates the importance of the estuary as a source of production for this species (Bertrand 1977). Three generations (late spring, mid-summer and fall) appear to be present in the upper bay (Bertrand 1977). This population is increased by immigrants which may have more than four generations a year and are carried to the bay by river discharge (Bertrand 1977). Evidently E. herdmani thrives best in brackish waters of estuaries.

10.) Cirripeds

Cirriped, immature (nauplii and cyprid) stages include several species of barnacles of the genus Balanus, especially during the summer. During the winter-spring months, the population in coastal Maine waters is probably dominated by Balanus balanoides. There appear to be two peaks of abundance which occur in spring (March and April or April and May) in Penobscot Bay (Bertrand 1977). In Boothbay Harbor, there appears to be only one major peak of cirriped larvae, in spring, with possibly a minor peak in reproduction in May (Sherman 1976). It is unknown whether these peaks represent the spawning activities of different species. The interaction of temperature along with food supply accounts for the reproductive peaks in barnacles (Vernberg and Vernberg 1970).

11.) Cladocerans

Two species of cladocerans dominate the zooplankton of Penobscot Bay; Podon leuckarti and Evadne nordmani from April through October (Bertrand 1977). Seasonal occurrence for P. leuckarti and E. nordmani were almost exactly the same; however, maximal abundances occurred slightly earlier for E. nordmani (Bertrand 1977). Densities were highest in mid-July with a second, though smaller, peak in late August or early September. In the Gulf of Maine and Boothbay Harbor the same pattern and time of greatest abundance of the cladocerans were noted (Bigelow 1926; Sherman 1976). Gieskes (1971) found that seasonal surface temperature was an important factor governing both the presence and abundance of P. leuckarti and E. nordmani in the North Atlantic. The temperature at which these cladocerans first appeared was about 43 to 45°F (6 to 7°C) and the optimal temperature for highest numbers is around 55°F (13°C). Both these species of cladocerans increase in numbers toward the outer Penobscot Bay (Bertrand 1977). Bertrand (1977) suggests that higher numbers of E. nordmani in the upper bay indicate that this species can compete more successfully in a variable environment. E. nordmani reproduces parthenogenetically through the summer from cysts that overwinter on the bottom (Bigelow 1926; Bainbridge 1958). Possibly P. leuckarti has the same mode of reproduction.

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12.) Echinoderm larvae

Echinoderm larvae were most abundant in Penobscot Bay from early May to late July (Bertrand 1977). Larvae of sea urchins and brittle stars were found in almost equal abundances (Bertrand 1977). Another echinoderm larva, of the holothurian *Psolus fabricii* was present in the bay in low numbers from April to July (Bertrand 1977). Echinoderm larvae were not a significant part of the coastal zooplankton (Sherman 1968).

13.) Appendicularia

Appendicularia made up over 27.4% of the zooplankton in the summer in coastal waters of Maine in 1966 (Sherman 1968). However, in the summer of 1965 this group accounted for only 2.1% of the zooplankton population (Sherman 1968). In Penobscot Bay, Bertrand (1977) reports the appendicularian, *Fritillaria borealis* as present in May and June in low numbers. He suggests that appendicularians and their discarded houses may play a biologically important role in the plankton ecology of the bay because phytoplankton and protozoans were found embedded in what appeared to be discarded houses of this group. Zooplankton grazers are thought to find the phytoplankton that are concentrated on the houses and, the houses also are thought to provide miniature habitats on which zooplankton may rest (Alldredge 1976).

14.) *Sagitta elegans*

Sagitta elegans is the only species of chaetognath reported from the coastal waters of Maine. In coastal waters of the Gulf of Maine, summer highs were recorded during 1963 to 1966 (Sherman and Schaner 1968). A summer population maxima was also reported by Bertrand (1977) in Penobscot Bay; however, small peaks were noted in the fall and spring. This seasonal pattern for *S. elegans* was just the reverse of the population trend found in Montsweag Bay.

S. elegans was noted by Bigelow (1926) as one of the characteristic zooplankters of the Gulf of Maine and has suggested that the Gulf of Maine is probably the northernmost center of reproduction for this species. Densities of this species in Penobscot Bay (Bertrand 1977) were found to be higher than those recorded by Sherman and Schaner (1968) in the coastal waters of the Gulf of Maine. Bertrand (1977) suggests that the topography of the bay (i.e., confined), high salinity water and abundant food supply are among the factors supporitng a large population in the bay. *Sagitta* elegans prefers low temperatures, and Russell (1932) indicated that reproduction may not occur at temperatures $>57°$F (14°C). Bigelow and Sears (1939) gave a temperature range of 39 to 61° F (3.6 to 16.1°C) for *S. elegans* in the Gulf of Maine, and 64 to 68° F (18 to 20° C) as the upper limit for survival. Because *S. elegans*, including immature stages, is present year round in Penobscot Bay and the species has similar seasonal patterns as the coastal population, Bertrand (1977) feels that there is a population of *S. elegans* which is endemic to the bay. Possibly the lowered water temperatures from Penobscot Bay east allow this species to maintain nearshore populations in the summer.

(Continued)

Apparently, temperature is a very important factor relative to its occurrence in brackish waters, but in the coastal waters, both temperature and its breeding cycle are of equal importance in the seasonal fluctuation of abundance (Bigelow and Sears 1939; and Sherman 1968).

15.) Coelenterate medusae (hydromedusae and scyphomedusae)

Medusae are important predators on the smaller zooplankton. Four species of hydromedusae were present in Penobscot Bay: Phialidium languidum, Sarsia sp. , Bougainvillia principis, and Stamophora mertensis (Bertrand 1977). The first two species were the only ones which were ever abundant. The most abundant species was P. languidum which was present from mid June to October. Mayer (1910) reports similar seasonal occurrence for New England coastal waters. Bigelow (1926) notes that in the Gulf of Maine this species is at its peak of abundance. Sarsia sp. was present mainly in the upper bay from May to July. Bertrand (1977) feels that this species comes from local populations.

Two species of scyphomedusae were present in Penobscot Bay: Cyanea capillata and Aurelia aurita. They are generally common in coastal waters of Maine. In Penobscot Bay, C. capillata increases in size and numbers in the spring through early summer. Numbers then decline and the adults disappear by October. Reproduction takes place in late August and September and the young jellyfish (ephyrae) grow slowly through the autumn and winter (Bertrand 1977). Similar seasonal patterns were noted by Bigelow (1926) in the inshore waters of the Gulf of Maine.

In Penobscot Bay, Aurelia aurita occurred in great numbers in late June and July in the third year of a three year study by Bertrand (1977). This would indicate that there are periodic "blooms" of this species.

16.) Ctenophores

Ctenophores are important predators on zooplankton, particularly copepods. Three species were present in Penobscot Bay: Bolinopsis infundibulum, Pleurobrachia pileus, and Beroe cucumis (Bertrand 1977). B. infundibulum was the most abundant followed by P. pileus and B. cucumis (Bertrand 1977).

Bertrand (1977) found that B. infundibulum produced three generations a year and had maximal abundances in the winter, spring and early fall. This species is found in such great abundance in Penobscot Bay that the waters are sometimes depleted of the microzooplankton population. In the Gulf of Maine, Bigelow (1926) found that this species only produced one generation per year in late summer to early fall. Many P. pileus were found in upper Penobscot Bay for the first six months of 1976, which may indicate the reproductive period of this species (Bertrand 1977). The occurrence of this species in the bay in low numbers in 1974 and 1975 (Bertrand 1977) indicates the patchy nature of populations of this species. Beroe cucumis was found in high abundances in upper Penobscot Bay in early summer 1976 (Bertrand 1977). Bertrand (1977) suggests that the population of B. infundibulum

(Continued)

may have been depleted because as Kanshilov (1955) suggests, P. cumis may feed exclusively on B. infundibulum.

17.) Molluscan larvae

Bivalve larvae were most abundant in the summer during the warm season. Several different species were dominant (i.e., abundant) in Penobscot Bay: Mya arenaria, Mytilus edulis, Mercenaria mercenaria. No peaks of reproduction were recorded (Bertrand 1977). In the Damariscotta River estuary two peaks were recorded: the first in spring and the second in autumn; and they were of equal magnitude (Lee 1974).

Gastropod larvae were not identified to species in Penobscot Bay (Bertrand 1977). The major abundant peak occurred in August-September, however they were present from June through September (Bertrand 1977). Abundances were less than for bivalve larvae (Bertrand 1977). Legare and Maclellan (1960) reported gastropod larvae in the spring, summer, and a few in autumn for Passamaquoddy and Cobscook Bays.

18.) Polychaete larvae

Polychaete larvae (setiger stage) were present in Penobscot Bay in the plankton from spring to mid-summer in 1975 and in November-December 1974 (Bertrand 1977). The most abundant polychaetes were Polydora spp. and Nereis spp. (Bertrand 1977). Bertrand (1977) feels that his data suggest that benthic polychaetes in the Bay probably spawn in spring and early summer. Peaks in numbers of polychaete larvae in spring and late summer are also found in the Damariscotta River estuary (Lee 1974). Polychaete larvae had a similar seasonal pattern of occurrence in Passamaquoddy Bay and Cobscook Bay (Legare and Maclellan 1960).

19.) Special Interaction:

Fishing and an Oceanic Coelenterate

The siphonophore, Nanonia cara, was found in great abundances off Boothbay Harbor and Portland (Rogers 1976). Fishing nets became clogged and fish catches declined dramatically. Rogers (1976) attributes this "bloom" to warmer than average temperatures. Bigelow (1926) notes that this species is widely distributed in the Gulf of Maine with maximum abundances occurring in summer. Bertrand (1977) reported that N. cara occurs in Penobscot Bay erratically and in low numbers. Since immature stages were collected, Bertrand (1977) feels that there is a native population in the bay. Temperatures from Penobscot Bay east are probably too low to induce the bloom phenomenon which occurred in western Maine.

CHAPTER 6

Appendix A1. Extent (miles) and Distribution of NWI Habitats Within Named River, Streams and Brooks in Each Region of Coastal Maine by River System

REGION 1

Presumpscot River System

Casco Bay: Squidere Gusset, Mill Br., Piscataqua R., Piscataqua R. East Branch, Meader Br.

Townships: Portland, Falmouth, Cumberland, Yarmouth

Habitat and Mileage:

Habitat	Mileage
R unknown	3.37
R1OW	.16
R2OW	11.54
R3OW	5.74
Total ROW	17.44
PEM	1.85
PSS	1.28
PFO	1.37
POW	.42
P^{ss}/em	.55
P^{fo}/ss	4.26
Total P	9.73

Royal River System

Casco Bay:

Townships: Yarmouth

Habitat and Mileage:

Habitat	Mileage
R unknown	.27
R2OW	2.10
Total ROW	2.10
POW	.98
Total P	.98

Harraseeket River System: Frost Gully Br., Allen Range Br., Kelsey Br., Mill Str.

Townships: Freeport, Brunswick

Continued

Appendix A1. Continued

REGION 1 (Continued)

Harraseeket River System (Continued)

Habitat and Mileage:

Habitat	Mileage
R unknown	4.86
PEM	0.89
P^{fo}/ss	1.18
Total P	2.07

Mill Creek System: Chenery Br., Norton Br.

Townships: Falmouth, Yarmouth

Habitat and Mileage:

Habitat	Mileage
R unknown	3.49
PSS	0.67
PFO	0.39
Total P	1.06

Little River System
Casco Bay:

Townships: Freeport

Habitat and Mileage:

Habitat	Mileage
R unknown	1.80
PSS	0.11
PFO	1.02
P^{fo}/ss	0.10
Total P	1.23

Streams, Brooks, Minor Rivers Draining Directly into Estuarine and Marine Waters (not rivers): Kimball Br., Bunganuc Br., Miller Cr., Mare Br., Alewife Br.

Continued

Appendix A1. Continued

REGION 1 (Continued)

Streams, Brooks, Minor Rivers Draining Directly into Estuarine and Marine Waters (not rivers) (Continued)

Townships: S. Portland, Brunswick, Cape Elizabeth

Habitat and Mileage:

Habitat	Mileage
R unknown	4.42
R2OW	2.05
R3OW	1.07
R2UB	0.37
Total ROW	3.49
PEM	0.28
PSS	0.69
PFO	0.65
POW	0.22
P^{em}/ow	0.31
Total P	2.15

Fore River System Portland Harbor - Casco Bay: Stroudwater R., Long Cr., Red Br., Barberry Cr.

Townships: Portland, S. Portland, Scarboro

Habitat and Mileage:

Habitat	Mileage
R unknown	2.01
R2OW	3.90
R3OW	2.04
Total ROW	5.94
PSS	0.11
PFO	1.58
POW	0.15
P^{ss}/em	0.26
P^{fo}/ss	0.94
Total P	3.04
L1OW	0.75
Total L	0.75

Continued

Appendix A1. Continued

REGION 1 (Continued)

Cousins River System

Casco Bay: Pratts Br., Merrell Br., Harvey Br.

Townships: Freeport, Yarmouth

Habitat and Mileage:

Habitat	Mileage
R unknown	0.61
PSS	1.21
PFO	6.24
P^{fo}/ss	0.24
Total P	7.69

Spurwink River System: Pollack Cr., Willow Br.

Townships: Cape Elizabeth

Habitat and Mileage:

Habitat	Mileage
R unknown	0.22
PSS	0.20
PFO	0.92
P^{ss}/em	0.27
P^{em}/ow	0.13
Total P	1.52

REGION 2

Kennebec River System: Chops Cr., Stone Br., Whiskeag Cr., Palmer Br., Back River Cr., The Branch, Nequasset Br., Kimball Br., Sasanoa R., Stony Meadow Br., Back R., Morton Br., Winnegance Cr., Cobbosseecontee Str., Dennis Br., Eastern R., Togus Str., Wilmot Br., Rolling Dam Br., Vaughn Br., Bond Br., Rockwood Br.

Townships: Bowdoinham, Richmond, Dresden, Woolwich, Farmingdale, Bath, Chelsea, Arrowsic, Gardiner, Phippsburg, Randolph, Georgetown, Pittston, Augusta

Continued

Appendix A1. Continued

REGION 2 (Continued)

Kennebec River System (Continued)

Habitat and Mileage:

Habitat	Mileage
R unknown	6.49
R1OW	42.34
R2OW	10.66
R3OW	13.58
Total ROW	66.58
PEM	4.42
PSS	11.00
PFO	15.78
POW	1.89
P^{ss}/em	2.80
P^{fo}/ss	5.05
Total P	40.94
L1OW	4.00
Total L	4.00

Androscoggin River System
Merrymeeting Bay: Little River, Simpson Br.

Townships: Topsham, Brunswick

Habitat and Mileage:

Habitat	Mileage
R unknown	8.05
R2OW	9.20
Total ROW	9.20

Abagadasset River System
Merrymeeting Bay: Baker Br.

Townships: Richmond, Bowdoinham

Habitat and Mileage:

Habitat	Mileage
R unknown	0.44
R1OW	3.55
R3OW	4.07
Total ROW	7.62

Continued

Appendix A1. Continued

REGION 2 (Continued)

Abagadasset River System (Continued)

Habitat and Mileage (Cont.)

Habitat	Mileage
PEM	1.05
PSS	3.50
PFO	3.42
POW	0.07
P^{ss}/em	0.80
Total P	8.84

Sheepscot River System
Sheepscot Bay: Dyer R., Deer Meadow Br., Cross R., Ward Br., Sasanoa R., Montsweag Br., Parsons Cr., Back R., Ben Br., Trout R., Marsh R., Little Sheepscot R., Chewonki Cr.

Townships: Wiscasset, Edgecomb, Newcastle, Alna, Woolwich, Westport

Habitat and Mileage:

Habitat	Mileage
R unknown	4.87
R1OW	1.56
R2OW	6.12
R3OW	4.60
Total ROW	12.28
PEM	0.29
PSS	3.89
PFO	4.48
POW	0.42
P^{ss}/em	0.13
P^{fo}/ss	0.14
Total P	9.35
L1OW	0.79
Total L	0.79

Continued

Appendix A1. Continued

REGION 2 (Continued)

Cathance River System
Merrymeeting Bay: Denham Str., Sedgely Br., Mallon Br.

Townships: Topsham, Bowdoinham

Habitat and Mileage:

Habitat	Mileage
R unknown	0.33
R1OW	5.09
R2OW	6.25
R3OW	1.05
R1FL	1.55
Total ROW	13.94
PEM	0.29
PSS	2.51
PFO	9.59
Total P	12.39

Streams, Brooks, Minor Rivers Draining Directly into Coastal Waters (not rivers): Little River, Muddy River, New Meadows River, Meadow Br.

Townships: Georgetown, Topsham, W. Bath, Bath, Harpswell , Phippsburg, Brunswick

Habitat and Mileage:

Habitat	Mileage
R unknown	0.75
R2OW	3.27
Total ROW	3.27
PEM	0.52
PSS	1.72
PFO	.25
Total P	2.49

REGION 3

Medomak River System: Medomak Br., Slaigo Br., Back Br., Demuth Br., Farnsworth Br., Benner Br.

Continued

REGION 3 (Continued)

Medomak River System (Continued)

Townships: Friendship, Waldoboro, Bremen

Habitat and Mileage:

Habitat	Mileage
R unknown	2.00
R2OW	1.19
R3OW	9.07
Total ROW	10.26
PEM	1.94
PSS	4.24
PFO	6.12
P^{ss}/em	0.94
P^{fo}/ss	0.71
Total P	13.95

Damariscotta River System: Oyster Cr., Wiley Br.

Townships: Newcastle , Bristol, Damariscotta, Nobleboro, South Bristol

Habitat and Mileage:

Habitat	Mileage
R unknown	1.41
PSS	0.17
PFO	0.21
Total P	0.38

Goose River System: Waterman Br.

Townships: Waldoboro, Friendship

Habitat and Mileage:

Habitat	Mileage
R unknown	0.11
R2OW	1.94
R3OW	0.35
Total ROW	2.29

Continued

REGION 3 (Continued)

Goose River System (Continued)

Habitat and Mileage (Cont.)

Habitat	Mileage
PSS	3.69
PFO	3.34
POW	0.22
P^{fo}/ss	0.10
Total P	7.35

Meduncook River System: Back River

Townships: Cushing, Friendship

Pemaquid River System: Little Falls Br.

Townships: Bristol, Bremen

Habitat and Mileage:

Habitat	Mileage
R unknown	2.78
R2OW	3.61
Total ROW	3.61
PEM	1.26
PSS	0.93
Total P	2.19
L1OW	4.13
Total L	4.13

Johns River System:

Townships: South Bristol, Bristol

REGION 4

Penobscot River System
Penobscot Bay: Sovadabscook Str., Carly Br., Brown Br., Ulmer Br., Reeds Br., Sedgeunkedunk Stream, Cove Br., North Br., Marsh Str., Clements Br., S. Branch Marsh R., Kenduskeag Str., Clarke Br., Meadow Br.,

Continued

REGION 4 (Continued)

Penobscot River System (Cont.): Clements Br., Felts Br., Littlefield Br., Meadow Br., Eaton Br., Perkins Br., Orland R., Colson Str., Stubbs Br., Main Str., Whites Br., Halfmoon Str., Narranissie R., Lane Br., Hawes Str.

Townships: Frankfort, Penobscot, Prospect, Castine, Verona, Veazie, Stockton Springs, Brewer, Hampden, Bangor, Orrington, Eddington, Winterport, Orland, Bucksport

Habitat and Mileage:

Habitat	Mileage
R unknown	10.06
R1OW	7.46
R2OW	16.56
R3OW	31.74
Total ROW	55.76
PEM	1.72
PSS	11.14
PFO	9.56
POW	0.93
P^{ss}/em	5.26
P^{fo}/ss	9.53
P^{fo}/em	0.68
Total P	38.82
L1OW	2.56
Total L	2.56

St. George River System: Oyster River, Mill R., Branch Br., Meadow Br., Beaver Dam Br., Keene Br., Fuller Br., Alford Br., Levensaler Br.

Townships: Warren, Thomaston, Rockland, Waldoboro, Cushing

Continued

REGION 4 (Continued)

St. George River System (Cont.)

Habitat and Mileage:

Habitat	Mileage
R unknown	6.16
R2OW	5.94
R3OW	6.95
Total ROW	12.89
PEM	2.75
PSS	8.48
PFO	7.28
P^{ss}/em	0.65
P^{fo}/ss	1.82
Total P	20.98
L1OW	0.59
Total L	0.59

Passagassawakeag River System: Webster Br., Marsh Fork, Wescot Str., Warren Br.

Townships: Belfast, Waldo

Habitat and Mileage:

Habitat	Mileage
R unknown	2.86
R1OW	0.23
R2OW	3.46
Total ROW	3.69
PEM	0.16
PSS	3.16
PFO	6.55
Total P	9.87

Weskeag River System
Muscle Ridge Channel
(W. Penobscot Bay): Sharkeyville Cr., Marsh Br.

Townships: S. Thomaston

Continued

REGION 4 (Continued)

Weskeag River System (Continued)

Habitat and Mileage:

Habitat	Mileage
R unknown	0.68
PEM	0.30
PFO	0.24
P^{fo}/ss	0.13
Total P	0.67

Little River System
Penobscot Bay: Piper Stream

Townships: Belfast, Northport

Habitat and Mileage:

Habitat	Mileage
R unknown	1.91
R2OW	0.10
R3OW	0.86
Total ROW	0.96
PSS	1.87
PFO	3.78
Total P	5.65
L1OW	1.06
Total L	1.06

Megunticook River System
W. Penobscot Bay:

Townships: Camden

Habitat and Mileage:

Habitat	Mileage
R unknown	0.23
R3OW	1.25
Total ROW	1.25
PFO	0.22
Total P	0.22
L1OW	1.81
Total L	1.81

Continued

REGION 4 (Continued)

Goose River System
W. Penobscot Bay:

Townships: Rockport

Habitat and Mileage:

Habitat	Mileage
R unknown	0.59
R2OW	0.54
R3OW	0.38
Total ROW	0.92
PEM	0.59
PSS	0.53
PFO	1.50
P^{fo}/ss	0.38
Total P	3.00

Ducktrap River System
W. Penobscot Bay: Kendall Br., Tucker Br., Black Br.

Townships: Lincolnville

Habitat and Mileage:

Habitat	Mileage
R unknown	3.25
R3OW	6.00
Total ROW	6.00
PEM	0.88
PSS	2.50
PFO	3.79
P^{fo}/ss	0.25
Total P	7.42

Bagaduce River System: Smelt Br., Winslow Str., Camp Str.

Townships: Castine, Brooksville, Penobscot

Habitat and Mileage:

Habitat	Mileage
R unknown	3.70
R2OW	1.04
Total ROW	1.04

Continued

Appendix A1. Continued

REGION 4 (Continued)		
Bagaduce River System (Continued)		
Habitat and Mileage (Cont.)	Habitat	Mileage
	PEM	0.18
	PSS	0.06
	PFO	1.68
	Total P	1.92
Goose River System Belfast Bay - Penobscot Bay:		
Townships:	Swanville, Belfast	
Habitat and Mileage:	Habitat	Mileage
	R unknown	0.20
	R3OW	1.21
	Total ROW	1.21
	PSS	2.53
	PFO	1.06
	POW	0.08
	P^{fo}/ss	0.14
	Total P	3.81
	L1OW	2.65
	Total L	2.65
Streams, Brooks, Minor Rivers Draining Directly into Coastal Waters (not rivers):	Smelt Br., Crockett Br., Shaw Br., Shepardson Br., Bog Br., Long Cove Br., Piper Br., Mill Br., Morrow Br., Great Br., Frohock Br., Fish Cr., Pats Br., Merchant Br.	
Townships:	Surry, Camden, Northport, Deer Isle, Brooksville, Isle Au Haut, Castine, Searsport, Lincolnville	

Continued

REGION 4 (Continued)

Streams, Brooks, Minor Rivers Draining Directly into Coastal Waters (not rivers) (Cont.)

Habitat and Mileage:

Habitat	Mileage
R unknown	15.18
R3OW	6.00
Total ROW	6.00
PEM	1.34
PSS	4.84
PFO	7.27
POW	0.14
Total P	13.59

REGION 5

Narraguagus River System Narraguagus Bay: Schoodic Br., Black Rock Br., Great Falls Branch, Meadow Br., Ash Bog Str., Narraguagus R. W. Branch.

Townships: Milbridge, Cherryfield, T10SD

Habitat and Mileage:

Habitat	Mileage
R unknown	0.93
R2OW	19.58
R3OW	0.18
Total ROW	19.76
PEM	0.43
PSS	0.96
PFO	4.09
POW	0.44
P^{ss}/em	1.09
P^{fo}/ss	1.65
P^{fo}/em	0.08
Total P	8.74
L2BB	0.63
Total L	0.63

Continued

Appendix A1. Continued

REGION 5 (Continued)

Tunk Stream System
Steuben Harbor: Downing Bog Stream

Townships: Steuben, Cherryfield, T10SD

Habitat and Mileage:

Habitat	Mileage
R unknown	2.61
R2OW	13.87
Total ROW	13.87
PSS	0.20
PFO	0.05
P^{ss}/em	0.34
P^{fo}/ss	0.37
Total P	0.96

Union River System
Union River Bay: Deadman Br., Branch Lake Str., Gilpatrick Br., Grays Br., Shackford Br., Moore Br., Card Br.

Townships: Surry, Ellsworth

Habitat and Mileage:

Habitat	Mileage
R unknown	3.80
R2OW	6.90
Total ROW	6.90
PEM	0.27
PSS	1.28
PFO	3.30
P^{ss}/em	2.74
P^{fo}/ss	0.31
Total P	7.90
L1OW	1.58
Total L	1.58

Continued

REGION 5 (Continued)

Pleasant River System

Pleasant Bay: W. Branch Pleasant R.,Dyke Br., Little R., Marst Br., Sherb Br., Knowles Br.

Townships: Harrington, Addison, Columbia, Columbia Falls

Habitat and Mileage:

Habitat	Mileage
R unknown	2.35
R2OW	19.00
R3OW	1.08
Total ROW	20.08
PEM	0.73
PSS	1.37
PFO	2.88
POW	0.13
Pss/em	0.72
Pfo/ss	4.82
Pfo/em	0.16
Total P	10.81

Continued

Appendix A1. Continued

REGION 5 (Continued)

Harrington River System
Harrington Bay:

Townships: Harrington, Columbia

Habitat and Mileage:

Habitat	Mileage
R2OW	0.99
Total ROW	0.99
PSS	1.05
P^{fo}/ss	0.25
Total P	1.30

Mill River System: Cole Cr.

Townships: Milbridge, Harrington

Habitat and Mileage:

Habitat	Mileage
PEM	0.16
PSS	0.05
PFO	0.78
Total P	0.99

Northeast Creek System: Aunt Betseys Br., Old Mill Br.

Townships: Bar Harbor

Habitat and Mileage:

Habitat	Mileage
R unknown	1.49
R2OW	1.63
Total ROW	1.63
PSS	1.91
PFO	1.61
Total P	3.52

Jordan River System
Mt. Desert Narrows: Stony Br., Krippens Br.

Townships: Trenton, Lamoine

Continued

REGION 5 (Continued)

Jordan River System (Continued)

Habitat and Mileage:

Habitat	Mileage
R unknown	3.59
PSS	0.10
POW	0.32
Total P	0.42

Skillings River System
Eastern Bay: Killkenny Str., Spring Br.

Townships: Hancock, Lamoine, T8SD

Habitat and Mileage:

Habitat	Mileage
R unknown	0.03
R2OW	0.95
Total ROW	0.95
PSS	2.07
PFO	1.64
POW	0.14
P^{ss}/em	0.92
P^{fo}/ss	0.53
Total P	5.30

Streams, Brooks, Minor Rivers Draining Directly into Coastal Waters (not rivers): Card Mill Str., Kitteredge Br., Alder Br., Richardson Br., Swan Br., Sargent Br., Flanders Str., Haddock Br., Loids Br., Heath Br., Little Harbor Br., Prays Br., Stony Br., Webster Br., Mill Str., Halfway Br., Chicken Mill Str., Tinker Br., Duck Br., Duck Cove Br., Eddie Br., Man of War Br., Kebes Br., Denning Br., Hunters Br., Whitten Parent Str., Marshall Br., Stanley Br., Curtis Cr., Lurvey Br., Cromwell Br., Beaver Meadow Br., Buttermilk Br., Bear Br., Mill Br., Bass Harbor Marsh, Otter Cr., West Br., Morancy Str., Canon Br., Egypt Str.

Continued

Appendix A1. Continued

REGION 5 (Continued)

Streams, Brooks, Minor Rivers
Draining Directly into
Coastal Waters (not rivers) (Cont.)

Townships: Gouldsboro, Trenton, Milbridge, Winter Harbor, Lamoine, Steuben, Bar Harbor, Mt. Desert, T7SD, S.W. Harbor, Sullivan, T8SD, Franklin, Hancock.

Habitat and Mileage:

Habitat	Mileage
R unknown	39.63
R2OW	1.12
R3OW	4.75
Total ROW	5.87
PEM	1.18
PSS	9.12
PFO	6.02
POW	0.90
P^{ss}/em	6.54
P^{fo}/ss	4.97
P^{fo}/em	0.52
Total P	29.25

REGION 6

Dennys River System
Dennys Bay: Wilson Str., Cathance Str.

Townships: Dennysville, Edmunds

Habitat and Mileage:

Habitat	Mileage
R2OW	4.50
R3OW	17.30
Total ROW	21.80
PSS	2.50
PFO	9.80
Total P	12.30

Continued

REGION 6 (Continued)

Machias River System

Machias Bay: Middle R., Anna Meadow Br., Longfellow Br., Mill Cr., Libby Br., Meadow Br.

Townships: Machias, Whitneyville, Centerville, E. Machias, Machiasport, Marshfield

Habitat and Mileage:

Habitat	Mileage
R unknown	0.39
R2OW	4.80
R3OW	5.00
Total ROW	9.80
PSS	6.61
PFO	4.58
POW	0.52
P^{ss}/em	0.96
P^{fo}/ss	1.01
Total P	13.68

Orange River System: Card Br., Moons Br., Finnegan Br., Bagley Br., Lively Br., East Str., Reynolds Br., Crane Br.

Townships: Marion, Whiting, Trescott

Habitat and Mileage:

Habitat	Mileage
R unknown	3.63
R2OW	5.77
R3OW	1.00
Total ROW	6.77
PEM	7.83
PSS	4.38
PFO	2.44
P^{ss}/em	4.56
P^{fo}/ss	0.86
Total P	20.07

Continued

REGION 6 (Continued)

St. Croix River System

Passamaquoddy Bay: Magurrewock Stream (E. Branch)

Townships: Calais

Habitat and Mileage:

Habitat	Mileage
R unknown	4.50
R1OW	0.30
R2OW	3.40
R3OW	4.40
Total ROW	8.10
PEM	2.90
PSS	1.00
PFO	0.20
Total P	4.10

East Machias River System

Machias Bay: Gooch Br.

Townships: East Machias

Habitat and Mileage:

Habitat	Mileage
R2OW	3.20
R3OW	5.00
Total ROW	8.20
PSS	0.90
PFO	3.60
Total P	4.50

Chandler River System

Chandler Bay: Libby Br., Kaylor Br., Terry Br., Alder Br., Samade Br., Dry Br., Cothell Meadow Br., Pecky Br., Beaver Br., Ebenezer Br.

Continued

Appendix A1. Continued

REGION 6 (Continued)

Chandler River System (Continued)

Townships: Centerville, Jonesborough, Columbia Falls

Habitat and Mileage:

Habitat	Mileage
R unknown	5.87
R10W	0.60
R20W	9.10
R30W	4.00
Total ROW	13.70
PEM	0.70
PSS	5.81
PFO	7.41
POW	0.25
p^{ss}/em	1.40
p^{fo}/ss	5.48
Total P	21.05

Hobart Stream System: Cranberry Br., Crane Meadow Br., Sunken Str.

Townships: Edmunds

Habitat and Mileage:

Habitat	Mileage
R unknown	2.65
R20W	5.10
Total ROW	5.10
PEM	0.20
PSS	2.40
PFO	1.35
p^{fo}/ss	0.77
Total P	4.72

West River System
Wohoa Bay - Western Bay: Lamsen Br., Grays Br.

Townships: Addison

Continued

Appendix A1.Continued

REGION 6 (Continued)

West River System (Continued)

Habitat and Mileage:

Habitat	Mileage
R unknown	0.32
PSS	1.10
PFO	1.09
POW	0.23
$\mathrm{P^{ss}/em}$	2.16
$\mathrm{P^{fo}/ss}$	0.31
Total P	4.89

Little River System

W. Passamaquoddy Bay: Boyden Stream

Townships: Perry

Habitat and Mileage:

Habitat	Mileage
R3OW	0.60
Total ROW	0.60

Eastern Stream System: Western Stream

Townships: Robbinston

Habitat and Mileage:

Habitat	Mileage
R unknown	1.77
PEM	0.21
PSS	0.48
PFO	2.08
$\mathrm{P^{fo}/ss}$	1.24
Total P	4.01

Pennamaquan River System

Passamaquoddy - Cobscook Bay: Crow Br., Meadow Br., Wilson Br.

Townships: Pembroke

Continued

REGION 6 (Continued)

Pennamaquan River System (Continued)

Habitat and Mileage:

Habitat	Mileage
R unknown	4.16
R2OW	0.50
R3OW	0.90
Total ROW	1.40
PEM	0.10
P^{fo}/ss	0.61
P^{fo}/em	0.53
Total P	1.24

Hardscrabble River System

Cobscook Bay: Meadow Br.

Townships: Dennysville, Pembroke

Habitat and Mileage:

Habitat	Mileage
R unknown	0.99
PEM	0.17
PSS	0.45
PFO	0.17
POW	0.06
P^{ss}/em	0.19
Total P	1.04

Englishman River System

Englishman Bay:

Townships: Roque Bluffs

Habitat and Mileage:

Habitat	Mileage
R2OW	1.00
Total ROW	1.00
PEM	0.50
PFO	0.50
Total P	1.00

Continued

Appendix A1. Concluded

REGION 6 (Continued)

Indian River System
Western Bay:

Townships: Jonesborough, Jonesport, Addison

Habitat and Mileage:

Habitat	Mileage
R2OW	3.80
Total ROW	3.80
PSS	3.80
Total P	3.80

Streams, Brooks, Minor Rivers Draining Directly into Coastal Water (not rivers): Holmes Str., Sandy River, Eastern Marsh Br., Spring Br., Bother Br., Schooner Br., Holmes Cove Br., White Cr., Huntley Cr., Western Marsh Cr., Wiggins Br., Mays Br., Hamilton Br., Sipp Br., Pottle Br., Bog Br., Starboard Cr., Crane Mill Br., Burnt Cove Br., Meadow Br., Smelt Br.

Townships: Whiting, Jonesport, Jonesboro, Cutler, Trescott, Lubec, Perry, Robbinston, Machiasport, Edmunds, Machias

Habitat and Mileage:

Habitat	Mileage
R unknown	8.97
R2OW	3.20
Total ROW	3.20
PSS	13.41
PFO	4.36
POW	0.50
P^{ss}/em	8.97
P^{fo}/ss	2.89
Total P	30.13

Table A2 Streams, Rivers, Brooks Flowing Exclusively Into Lakes or Ponds

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Region 2

Stream Name(s): Cambella
Receiving Lake or Pond: West Harbor Pond
Townships: Boothbay, Boothbay Harbor
Habitat and Mileage:

Habitat	Mileage
R unknown	0.22
PEM	0.31
PSS	0.07

Stream Name(s): Spring Br., Sidney Bog Br.
Receiving Lake or Pond: Great Sidney Bog
Townships: Augusta
Habitat and Mileage:

Habitat	Mileage
R unknown	0.06
PSS	0.66
PFO	2.26
P^{fo}/ss	0.50
POW	0.05

Region 4

Stream Name(s): McCasling Str., Orland
Receiving Lake or Pond: Wight Pond
Townships: Penobscot
Habitat and MIleage:

Habitat	Mileage
R unknown	1.86
PEM	0.41
PSS	0.14
PFO	1.21
P^{fo}/ss	0.16

Continued

Table A2 Continued

Region 4 (Continued)

Stream Name(s): Carlton Str.
Receiving Lake or Pond: Second Pone, First Pond
Townships: Blue Hill
Habitat and Mileage:

Habitat	Mileage
R unknown	1.46
PEM	0.49
PSS	0.16
PFO	0.38

Stream Name(s): Meadows Br., Jerrys Br.
Receiving Lake or Pond: Parker Pond
Townships: Brooksville
Habitat and Mileage:

Habitat	Mileage
PEM	0.31
PSS	0.70
PFO	1.86

Stream Name(s): Billings Br.
Receiving Lake or Pond: Walker Pond
Townships: Brooksville
Habitat and Mileage:

Habitat	Mileage
R unknown	0.47

Stream Name(s): Seneca Br.
Receiving Lake or Pond: Pierce Pond
Townships: Penobscot
Habitat and Mileage:

Habitat	Mileage
R unknown	0.55
PFO	0.80

Continued

Table A2 Continued

Region 4 (Continued)

Stream Name(s): Mill Brook
Receiving Lake or Pond: Dairs Pond
Townships: Eddington
Habitat and Mileage:

Habitat	Mileage
R unknown	0.03
R2OW	0.12
PFO	1.44
P^{fo}/ss	0.16

Stream Name(s): Meadow Br., Dead River, Gulch Br., Moose Str., Graig Pond Br., Hothole Str., Guld Br.
Receiving Lake or Pond: Alamoosook Lake
Townships: Orland
Habitat and Mileage:

Habitat	Mileage
R unknown	1.61
R2OW	0.90
PEM	0.58
PSS	1.32
PFO	1.68
P^{fo}/ss	0.92
P^{ss}/em	1.09
L1OW	2.38

Stream Name(s): Hothole Br., Atkinson Br.
Receiving Lake or Pond: Hothole Pond
Townships: Orland
Habitat and Mileage:

Habitat	Mileage
R unknown	0.40
PEM	0.06
PSS	0.16
PFO	1.02
p^{fo}/ss	0.41
p^{ss}/em	0.74

Continued

Table A2 Continued

Region 4 (Continued)

Stream Name(s): Moore Br.
Receiving Lake or Pond: Toddy Pond
Townships: Penobscot, Surry, Orland
Habitat and Mileage:

Habitat	Mileage
R unknown	0.35
R2OW	0.45
PFO	0.29

Stream Name(s): Bull Brook
Receiving Lake or Pond: Long Pond
Townships: Isle Au Haut
Habitat and Mileage:

Habitat	Mileage
R unknown	0.62
PFO	0.15

Stream Name(s): Western Brook
Receiving Lake or Pond: Toddy Pond
Townships: Blue Hill
Habitat and Mileage:

Habitat	Mileage
R unknown	1.76
PEM	0.34
PSS	0.20
PFO	2.49

Stream Name(s): McGann Bog, Copeland Br. Mill Str., Colby Br, Dave Br.
Receiving Lake or Pond: Long Pond
Townships: Bucksport
Habitat and Mileage:

Habitat	Mileage
R unknown	2.44
R2OW	2.03

Continued

Table A2 Continued

Region 4 (Continued)

Stream Name(s) (Continued): McGann Bog, Copeland Br., Mill Str., Colby Br., Dave St.

Habitat and Mielage (Continued):

Habitat	Mileage
PEM	0.46
PSS	2.63
PFO	0.52
P^{fo}/ss	2.41
P^{ss}/em	0.42

Stream Name(s): Pinkham Brook
Receiving Lake or Pond: Hancock Pond
Townships: Bucksport
Habitat and Mileage:

Habitat	Mileage
R unknown	1.04
Pss	0.26

Region 5

Stream Name(s): Boggy Brook
Receiving Lake or Pond: Green Lake
Townships: Ellsworth
Habitat and Mielage:

Habitat	Mileage
R unknown	0.06
R2OW	1.44
P^{ss}/em	0.55
PFO	0.79

Stream Name(s): Hapworth Br.
Receiving Lake or Pond: Graham Lake
Townships: T8(SD)
Habitat and Mileage:

Habitat	Mileage
R unknown	0.39
P^{ss}/em	0.34

Continued

Table A2 Continued

Region 5 (Continued)

Stream Name(s): Georges Br.
Receiving Lake or Pond: Georges Pond
Townships: Franklin
Habitat and Mileage:

Habitat	Mileage
R2OW	1.06
PFO	1.46

Stream Name(s): Old Meadow Br.
Receiving Lake or Pond: Franklin
Townships: T8(SD)
Habitat and Mileage:

Habitat	Mileage
R unknown	0.03
PEM	0.87
PFO	0.49

Stream Name(s): Patten Str., Sawport Br., Ellsworth
Receiving Lake or Pond: Lower Patten Pond
Townships: Ellsworth
Habitat and Mileage:

Habitat	Mileage
R unknown	2.15
R2OW	0.71
P^{ss}/em	0.67
PFO	0.75
P^{fo}/ss	1.26

Stream Name(s): Gutt Br., Winkrmpang Br., Dean Br., Tannery Br.
Receiving Lake or Pond: Branch Lake
Townships: Ellsworth
Habitat and Mileage:

Habitat	Mileage
R unknown	2.74

Continued

Table A2 Continued

Region 5 (Continued)

Stream Name(s) (Continued): Gutt Br., Winkrmpang Br., Dean Br., Tannery Br.

Habitat and Mileage (Continued):

Habitat	Mileage
PSS	0.20
PFO	2.29
P^{fo}/ss	0.37

Stream Name(s): Big Chief Spring
Receiving Lake or Pond: Forbes Pond
Townships:
Habitat and Mileage:

Habitat	Mileage
R unknown	1.36
PSS	0.50
PFO	0.72

Stream Name(s): Steward Brook
Receiving Lake or Pond: Seal Cove Pond
Townships: Tremont - Mt. Desert
Habitat and Mileage:

Habitat	Mileage
R unknown	0.91

Stream Name(s): Hodgdon Br.
Receiving Lake or Pond: Hodgdon Pond
Townships: Tremont - Mt. Desert
Habitat and Mileage:

Habitat	Mileage
R unknown	0.86

Stream Name(s): Duck Pond Br., Great Br.
Receiving Lake or Pond: Great Pond
Townships: Mt. Desert
Habitat and Mileage:

Habitat	Mileage
R unknown	2.18

Continued

Table A2 Continued

Region 5 (Continued)

Stream Name(s): Martin Ridge Br.
Receiving Lake or Pond: Donnell Pond
Townships: Franklin, T9SD
Habitat and Mileage:

Habitat	Mileage
R unknown	1.53
P^{fo}/ss	0.11

Region 6

Stream Name(s): Penknife Br.
Receiving Lake or Pond: Buyden Lake
Townships: Robbinston
Habitat and Mileage:

Habitat	Mileage
R unknown	1.71
PSS	0.08
PFO	0.39
P^{fo}/ss	0.08

Stream Name(s): Dead Meadow Str.
Receiving Lake or Pond: Howard Lake
Townships: Robbinston
Habitat and Mileage:

Habitat	Mileage
R unknown	0.43
PSS	0.82
PFO	0.14

Stream Name(s): Taylor Br.
Receiving Lake or Pond: Pennamaqua Lake
Townships: Pembroke
Habitat and Mileage:

Habitat	Mileage
PEM	0.55
P^{ss}/em	0.34
PSS	0.97
P^{fo}/ss	0.82

Continued

Table A2 Concluded

Region 6 (Continued)

Stream Name(s): Mooseham Br., Rocky Meadow Br.
Receiving Lake or Pond: Pennamaquam Lake
Townships: Charloyte
Habitat and Mileage:

Habitat	Mileage
R unknown	0.78
R20W	2.02
PEM	0.52
P^{ss}/em	0.36
PSS	0.54
PFO	0.59

Stream Name(s): Ohio Br., Chandler Br.
Receiving Lake or Pond: Pennamaquam Lake
Townships: Charlotte
Habitat and Mileage:

Habitat	Mileage
R unknown	1.25
R20W	0.33
PEM	1.46
P^{ss}/em	0.19
PFO	0.27

APPENDIX B

Chemical characteristics of some Maine rivers

Table B1. Typical Water Chemistry Parameters of Some Maine Rivers[a]

River	Ion[c]		Maximum		Minimum	
			Date	Conc. (ppm)	Date	Conc. (ppm)
St. Croix Milltown, ME	HCO_3		Feb. 1977	23.0	May 1977	8.0
	Ca	d	Feb. 1977	6.1	May 1977	3.4
	Mg	d	Dec. 1976	1.1	Feb. 1977	0.2
	P	t	Aug. 1977	0.05	May 1977	0.01
	NO_3	tn	Feb. 1977	2.2	Feb,Aug. 1977	1.3
	Na	d	Feb. 1977	8.7	May 1977	3.5
	K	d	Dec. 1976 May 1977	0.5	Aug. 1977	0.8
	Cl	d	No data			
	SO_4	d	Dec. 1976	7.9	May 1977	4.7
	Al	t	Feb,May,Aug.1977	0.15	Dec. 1976	0.14
	B	t	Dec. 1976	0.02	No data	
	Fe	t	Aug. 1977	0.29	Dec. 1976	0.14
	Mn	t	Aug. 1977	0.06	Dec. 1976	0.02
	Cu	t	Feb. 1977	0.01	May 1977	0.00
	Zn	t	Aug. 1977	0.05	Dec. 1976 Feb. 1977	0.01
Androscoggin Brunswick, ME	HCO_3		Dec. 1976	19.0	Apr. 1977	10.0
	Ca	d	Aug. 1977	6.6	Apr. 1977	3.7
	Mg	d	Dec. 1976 Aug. 1977	1.0	Apr. 1977	0.5
	P	t	Apr. 1977	0.03	Aug. 1977	0.08
	NO_3	tn	Jan. 1977	6.7	Oct. 1977	1.9
	Na	d	Aug. 1977	16.0	Apr. 1977	4.0
	K	d	Aug. 1977	1.3	Apr. 1977	0.6
	Cl	d	Feb. 1977	19.0	Apr. 1977	3.7
	SO_4	d	Aug. 1977	14.0	Apr. 1977	6.5
	Al	t	No data			
	B	t	No data			
	Fe	t	Aug. 1977	0.49	Feb. 1977	0.31
	Mn	t	Aug. 1977	0.07	Apr. 1977	0.03
	Cu	t	Feb. 1977	0.01	Dec. 1976	0.00
	Zn	t	Dec. 1976 Apr,Aug. 1977	0.02	Feb. 1977	0.01

* river in coastal zone, gage station not in coastal zone
x isolated monthly readings - not mean value

[a] U.S. Geological Survey 1978
[b] Taylor 1973
[c] d dissolved
t total
tn total nitrogen

(Continued)

Table B1. Continued.

River	Ion		Maximum		Minimum	
			Date	Conc. (ppm)	Date	Conc. (ppm)
Sheepscot [b]	HCO_3		Sept 1969	14.8	Nov. 1969	3.3
	Ca	d	Mar. 1969	3.7	Feb. 1969	1.8
	Mg	d	Mar. 1969	0.89	Feb. 1969	0.46
	P	t	July 1969	0.27	Sept 1969	0.05
	NO_3	tn	No data			
	Na	d	Mar, Dec. 1969	3.9	July 1969	1.9
	K	d	Nov. 1969	0.9	Oct. 1969	0.19
	Cl	d	Sept 1969	5.3	Feb. 1969	1.5
	SO_4	d	Feb. 1969	16.1	Nov. 1969	2.1
	Al	t	Mar. 1969	0.093	Sept 1969	0.02
	B	t	Sept 1969	0.168	Nov. 1969	0.004
	Fe	t	July 1969	0.390	Dec. 1969	0.10
	Mn	t	Sept 1969	0.75	Jan. 1970	0.01
	Cu	t	July 1969	0.011	Sept 1969	0.002
	Zn	t	June 1969	0.013	Nov. 1969	0.001
Penobscot * West Enfield, ME	HCO_3		Dec. 1976	17.0	July 1977	13.0
	Ca	d	Aug. 1977	6.1	July 1977	4.9
	Mg	d	Aug. 1977	1.3	Dec. 1976 Feb. 1977 May 1977	1.1
	P	t	July 1977	0.16	May 1977	0.01
	NO_3	tn	Aug. 1977	2.4	May 1977	0.97
	Na	d	Dec. 1976	3.5	May 1977	1.8
	K	d	Aug. 1977	0.8	Nov. 1977 Feb. 1977	0.4
	Cl	d	Feb. 1977	3.2	May 1977	1.6
	SO_4	d	July 1977	7.4	May 1977	6.4
	Al	t	Dec. 1969	0.1	Oct. 1969	0.026 [b]
	B	t	Feb. 1969	0.092	Nov. 1969 Jan. 1970	0.002 [b]
	Fe	t	July 1977	0.240	Feb. 1977	0.150
	Mn	t	July 1977 Aug. 1977	0.040	Dec. 1976 Feb. 1977	0.020
	Cu	t	July 1977	0.085	Dec. 1976 Feb. 1977	0.00
	Zn	t	May 1977	0.040	Dec. 1976 Feb. 1977	0.010
Kennebec * Bingham, ME	HCO_3		Dec. 1976 Feb. 1977	16.0	Aug. 1977	7.0
	Ca	d	Dec. 1976	4.8	May 1977	3.5
	Mg	d	Dec. 1976 May 1977	1.1	Feb. 1977 Aug 1977	0.9
	P	t	Nov. 1976 Dec. 1976 Mar. 1977	0.03	May 1977	0.0
	NO_3	tn	Jan. 1977	4.1	Aug. 1977	0.8

(Continued)

Table B1. Continued

River	Ion		Maximum		Minimum	
			Date	Conc. (ppm)	Date	Conc. (ppm)
Kennebec * (Continued)	Na	d	Dec. 1976 Aug. 1977	1.1	May 1977	0.6
	K	d	Aug. 1977	0.5	Feb. 1977	0.3
	Cl	d	Dec. 1976	2.4	Aug. 1977	0.7
	SO_4	d	Feb. 1977 May 1977	5.2	Aug. 1977	4.1
	Al	t	No data			
	B	t	No data			
	Fe	t	May 1977	0.220	Aug. 1977	0.080
	Mn	t	Dec. 1976 May 1977 Aug. 1977	0.020	Feb. 1977	0.010
	Cu	t	Feb. 1977	0.010	Dec. 1976 May 1977	0.0
	Zn	t	Dec. 1976	0.020	Feb. 1977	0.0
Machias [b]	HCO_3		Sept 1969	6.2	Apr. 1969	1.0
	Ca	d	Feb. 1969	5.0	Mar. 1969	1.2
	Mg	d	Dec. 1969	0.56	Feb. 1969	0.10
	P	t	June 1969	0.44	Oct. 1969	0.01
	NO_3	d	June 1969	0.25	Nov. 1969	0.06
	Na		Sept 1969	4.0	July 1969	1.3
	K	t	June 1969	0.81	July 1969	0.14
	Cl		Mar. 1969	3.2	Nov. 1969	1.2
	SO_4		Feb. 1969	7.1	Jan. 1970	2.4
	Al	t	Dec. 1969	0.177	Feb. 1969	0.035
	B	t	Apr. 1969	0.022	Nov. 1969	0.005
	Fe	t	July 1969	0.365	Mar. 1969	0.130
	Mn	t	Apr. 1969	0.115	Sep,Oct. 1969	0.014
	Cu	t	Apr. 1969	0.012	Sep,Oct. 1969	0.001
	Zn	t	Mar. 1969	0.013	Feb,Jun,Oct, Dec. 1969	0.003
Narraguagus [b]	HCO_3		Sept 1969	12.0	Apr. 1969	2.6
	Ca	t	Apr. 1969	3.5	Nov. 1969	1.4
	Mg	t	Apr. 1969	0.85	July 1969	0.44
	P	t	June 1969	0.27	Mar. 1969	0.01
	NO_3		Apr. 1969	0.30	Feb,Sep., Oct. 1969	0.10
	Na		Apr. 1969	4.9	July 1969	1.2
	K	t	Jan. 1970	0.59	Oct. 1969	0.21
	Cl		July 1969	4.3	Oct,Dec.,1969	1.7
	SO_4		Sept 1969	8.1	Oct. 1969	3.1
	Al	t	Nov. 1969	0.117	Apr. 1969	0.049
	B	t	Feb. 1969	0.350	Mar. 1969	0.005
	Fe	t	Sept 1969	0.375	Mar. 1969	0.120
	Mn	t	Apr. 1969	0.087	Oct. 1969	0.015
	Cu	t	Apr. 1969	0.013	Jul,Sept 1969	0.001
	Zn	t	Apr,July 1969	0.007	Oct. 1969	0.003

(Continued)

Table B1. Concluded

River	Ion	Maximum		Minimum	
		Date	Conc. (ppm)	Date	Conc. (ppm)
St. George[b]	HCO_3	Oct. 1969	9.9	Apr. 1969	5.1
	Ca t	Oct,Dec, 1969	5.6	Sept 1969	2.2
	Mg t	Nov. 1969	0.95	Mar. 1969	0.10
	P t	Dec. 1969	0.41	Sept 1969	0.06
	NO_3	Mar. 1969	0.66	Jan. 1969	0.11
	Na	Sept 1969	5.5	July 1969	2.7
	K t	Nov. 1969	0.76	July 1969	0.23
	Cl	July 1969	7.6	Nov. 1969	2.9
	SO_4	Feb. 1969	15.7	Sept 1969	3.0
	Al t	Apr. 1969	0.060	Sept 1949	0.014
	B t	Sept 1969	0.037	Mar. 1969	0.007
	Fe t	July 1969	0.490	Apr. 1969	0.075
	Mn t	Apr. 1969	0.125	Nov,Dec. 1969	0.017
	Cu t	Apr. 1969	0.016	Sep,Oct. 1969	0.001
	Zn t	Apr. 1969	0.012	Nov. 1969	0.002
Union	HCO_3	Feb. 1969	9.4	July 1969	4.0
	Ca	Dec. 1969	4.3	Jul,Sep. 1969	1.7
	Mg	Nov. 1969	0.74	Apr. 1969	0.27
	P	Dec. 1969	0.31	Apr. 1969	0.03
	NO_3	June 1969	0.37	Apr. 1969	0.10
	Na	Apr. 1969	5.1	July 1969	2.0
	K	Apr. 1969	0.95	July 1969	0.13
	Cl	Mar. 1969	4.0	Nov. 1969	1.7
	SO_4	Mar. 1969	7.6	Nov. 1969	3.2
	Al	Nov. 1969	0.185	June 1969	0.022
	B	Sept 1969	0.046	Nov. 1969	0.007
	Fe	Nov. 1969	0.465	Apr. 1969	0.160
	Mn	Apr. 1969	0.130	Nov. 1969	0.017
	Cu	Feb. 1969	0.008	Nov. 1969	0.001
	Zn	Apr. 1969	0.055	Sep,Nov. 1969 Jan. 1977	0.003

Table B2. Maximum and Minimum Monthly Mean pH in Some Maine Rivers During Water Year October 1976 to September 1977.

River	Key	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Yearly max/min
St. Croix Milltown ME		8.1 6.1	7.4 6.4	8.1 6.3	7.0 6.6	7.6 6.3	6.7 6.2	6.6 6.2	6.7 6.4	6.6 6.2	6.7 6.2	6.8 6.5	6.8 6.5	8.1 (Oct,Dec) 6.6 (Apr,June)
Androscoggin Brunswick, ME	x	6.6	-	6.7	6.7	6.7	6.8	6.6	-	6.8	-	7.0	6.8	6.6 (Oct,Apr) 7.0 (Aug)
Presumpscot W. Falmouth, ME		6.9 6.6	6.9 6.7	7.1 6.6	6.8 6.6	6.9 6.7	6.9 6.6	7.0 6.6	7.0 6.2	7.0 6.4	7.2 6.4	7.2 6.8	6.9 6.4	7.2 (July,Aug) 6.2 (May)
Penobscot W. Enfield, ME	* x	-	6.6	6.6	6.5	6.4	6.6	-	6.2	6.5	6.7	6.9 6.8	6.8	6.9 (Aug) 6.2 (May)
Kennebec Bingham, ME	* x	-	6.7	6.7	6.6	6.8	6.8	-	6.7	6.6	-	6.8 6.6	6.7	6.8 (Feb, Mar, Aug) 6.6 (Jan,June, Aug)

* river in coastal zone, gage station not in coastal zone.
x isolated monthly readings - not mean value.

Table B3. Maximum and Minimum Monthly Mean pH in Some Maine Rivers During Water Year February 1969 to January 1970 [a]

River	Feb	Mar	Apr	Jun	Jul	Sep	Oct	Nov	Dec	Jan	Yearly max/min
Machias	6.5	5.5	7.0	6.8	6.0	6.5	6.6	6.0	6.4	6.2	7.0 (Apr. 1969) 5.5 (Mar. 1969)
Narraguagus	6.4	6.0	7.0	7.0	6.0	6.8	6.2	6.2	6.3	6.4	7.0 (Apr.,Jun. 1969) 6.0 (Mar.,Jul. 1969)
St. George	6.5	6.5	6.6	6.3	5.5	7.0	6.4	6.1	7.0	6.4	7.0 (Sep.,Dec. 1969) 6.1 (Nov. 1969)
Union	6.2	6.1	6.7	6.9	6.0	6.5	6.3	6.0	6.2	6.7	6.9 (Jun. 1969) 6.0 (Jul.,Nov. 1969)

[a] Taylor 1973.

Table B4. Maximum and Minimum Monthly Mean Dissolved O_2 (mg/l) in Some Maine Rivers During Water Year October 1976 to September 1977.

River	Key	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Yearly max/min
St Croix		12.3	14.0	-	11.9	12.2	13.2	14.2	12.3	9.5	8.0	6.9	8.4	14.2 (Apr)
Milltown, ME		8.9	11.5	-	10.6	8.8	7.6	11.0	7.0	7.2	5.3	5.3	6.1	5.3 (July,Aug)
Androscoggin	x	11.0	-	14.0	13.0	-	13.2	11.0	-	8.7	-	8.7	8.5	14.0 (Dec)
Brunswick, ME				13.0								7.3		7.3 (Aug)
Presumpscot		11.1	11.4	11.7	11.6	10.6	12.2	12.1	10.3	9.4	8.4	8.4	9.1	12.2 (Mar)
W. Falmouth, ME		8.6	10.3	11.0	10.4	9.3	8.9	9.0	8.8	8.1	6.2	7.1	7.6	6.2 (July)
Penobscot	*	-	12.2	-	12.0	12.0	13.0	-	8.4	9.4	7.4	7.8	8.9	13.0 (Mar)
W. Enfield,ME	x											7.4		7.4 (July,Aug)
Kennebec	*	-	11.2	-	13.0	13.0	13.0	-	12.0	9.4	-	7.8	8.5	13.0 (Jan,Feb,Mar)
Bingham, ME	x											7.7		7.7 (Aug)

* river in coastal zone, gage station not in coastal zone.

x isolated monthly reading - not mean values.

Table B5. Alkalinity Levels (mg/1 $CaCO_3$) in Some Maine Rivers During Water Year October 1976 to September 1977

River	Key	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
St. Croix Milltown, ME		-	-	14	-	19	-	-	7	-	-	10	-
Androscoggin Brunswick, ME		-	-	16	-	16	-	8	-	-	-	14	-
Penobscot W. Enfield, ME	*	-	-	14	-	13	-	-	13	-	12 11	12	-
Kennebec Bingham, ME	*	-	-	13	-	13	-	-	11	-	-	6	-

* river in coastal zone, gage station not in coastal zone.

Table B6. Maximum and Minimum Monthly Mean Specific Conductance (micromhos/cm) in Some Maine Rivers During Water Year October 1976 to September 1977

River	Key	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Yearly max/min
St. Croix Milltown, ME		107 56	92 66	103 67	102 87	96 54	90 52	66 40	72 34	75 37	97 36	103 64	105 65	107 (Oct) 34 (May)
Androscoggin Brunswick, ME		140 52	83 76	132 98	153 133	169 156	175 40	67 42	104 55	133 110	127 89	148 95	160 116	175 (Oct) 40 (Mar)
Presumpscot W. Falmouth, ME		128 86	115 94	119 87	123 96	162 77	134 72	118 54	85 64	88 34	87 76	96 73	127 90	162 (Feb) 34 (June)
Penobscot W. Enfield, ME	*	70 51	69 51	102 55	72 64	74 59	82 58	54 42	- -	52 38	59 45	65 53	65 56	102 (Dec) 38 (June)
Kennebec Bingham, ME	*	37 36	38 32	39 36	48 39	57 47	- -	- -	- -	- -	41 36	42 36	41 33	57 (Feb) 32 (Nov)

* river in coastal zone, gage station not in coastal zone.

Table B7. Specific Conductance (micromhos/cm) in Some Maine Rivers During Water Year February 1969 to January 1970 [a].

River	Feb	Mar	Apr	June	July	Sept	Oct	Nov	Dec	Jan	Yearly max/min
Machias	15.0	23.0	20.5	23.0	22.0	25.0	24.5	34.0	35.9	33.5	35.9 (Dec. 1969) 15.0 (Feb. 1969)
Narraguagus	24.0	35.0	27.1	37.7	50.5	40.5	32.0	30.0	30.0	30.0	50.5 (July 1969) 24.0 (Feb. 1969)
St. George	50.5	39.0	21.0	45.3	50.2	33.0	33.0	31.5	47.0	46.0	50.5 (Feb. 1969) 21.0 (Apr. 1969)
Union	21.0	30.0	29.0	31.5	24.5	29.5	30.5	33.0	33.6	34.0	33.6 (Dec. 1969) 21.0 (Feb. 1969)

[a] Taylor 1973.

CHAPTER 7

Table 1 General, Geography, Morphometry, and Data Sources for 215 Named Lakes or Ponds in the Coastal Zone by Region

Name	(1) Pond or Lake	MIDAS no.	Leaflet no.	Township	(2) County	USGS quad.	(3) Data sources	(4) Municipal water supply	Elevation (m)	Max. depth (m)	(5) Stratification type	NWI (acres)
Region 1 (4 Lakes)												
Clark	P											
Forest	L											
Great	P	5648	204	Cape Eliza	8	Casco Bay	861	0	5	1.5	0	85.8
Highland	L	3734	199	Falmouth	8	Gray	748612	1	58	20.4	2	260.7
Region 2 (34 Lakes)												
Adams	P	5336	528	Boothbay	5	Boothbay	512	1		6.7	1	77.0
Anderson	P	5422	425	Augusta	9	Vassalboro	1	0		10.0	2	18.7
Appalachie	P	5370		Boothbay H	5	Boothbay	1	0		2.1	0	12.0
Bradley	P	5220		Topsham	7	Bath						34.0
Campbell	P	5224		West Bath	7	Bath	1	0	15	6.4	0	15.0
Center	P	0277	920	Phippsburg	9	Bath	1	0		2.1	0	77.0
Dam	P	5418	439	Augusta	9	Vassalboro	13	0		6.7	1	91.7
Dresden Bog												355.1
Gardiner	P	5406	538	Wiscasset	5	Wiscasset	13	0		6.4	1	81.1
Greeley	P	5432	452	Augusta	9	Vassalboro	1	0		4.6	1	46.7

Key:

(1): P = pond, L = lake.
(2): Counties - 1 = Hancock, 2 = Washington, 3 = Waldo, 4 = Knox, 5 = Lincoln, 6 = Penobscot, 7 = Sagadahoc, 8 = Cumberland, 9 = Kennebec.
(3): See text Table for code to data sources.
(4): 1 = yes, 0 = no.
(5): 0 = epilimnion only, 1 = epilimnion and metalimnion only, 2 = tripartite stratification with hypolimnion.

(Continued)

Table 1 (Continued)

Name	(1) Pond or Lake	MIDAS no.	Leaflet no.	Township	(2) County	USGS quad.	(3) Data sources	(4) Municipal water supply	Elevation (m)	Max. depth (m)	(5) Stratification type	[illegible]
Region 2 (Cont.)												
Houghton	P	5226	921	West Bath	7	Bath	81	0	27	4.6	1	21.0
Hutchinson	P	5304	456	Farmingdale	9	Augusta	140	0		7.3	1	43.5
Jimmie	P	5244	457	Manchester	9	Augusta	4210	0		22.9	2	24.4
Joys	P	5376	459	Pittston	9	Wiscasset	1	0		5.5	1	22.6
Knickerbocker	L	5368	546	Boothbay	5	Boothbay	41	0		9.8	1	108.0
Lily	P	5358	547	Edgecomb	5	Boothbay	1	0		4.0	0	65.0
Little Togus	P	5428	463	Augusta	9	Vassalboro	13	0		6.7	0	46.1
Lower Togus	P	5430		Augusta	9	Vassalboro						286.2
Meetinghouse	P	5232	923	Phippsburg	7	Bath	1	0		6.1	1	5.0
Nehumkeag	P	5378	477	Pittston	9	Wiscasset	1	0		4.6	0	181.8
Nequasset	L	5222	924	Woolwich	7	Bath	2431	1		19.2	2	419.0
Pinkham	P	5402	556	Alna	5	Wiscasset	1	0		4.3	0	21.0
Pleasant	P	5254	475	Gardiner	9	Gardiner	2410	1		7.9	0	427.6
Sewall	P	9943	925	Arrowsic	7	Bath	1	0		3.4	0	48.0
Sherman	L	5404	558	Edgecomb	5	Wiscasset	1	0		4.9	0	212.6
Spectacle	P	5410	486	Vassalboro	9	Vassalboro	13	0		30.5	2	36.6
Sprague	P	5228	927	Phippsburg	7	Bath	81	0	21	7.3	2	9.0
Threecornered	P	5424	488	Augusta	9	Vassalboro	4310	0		10.1	1	179.3
Tinkham	P	5436	491	Chelsea	9	Vassalboro	1	0		5.2	1	25.3
Togus	P	9931	492	Augusta	9	Vassalboro	0431	0		14.9	1	640.1
Tolman	P	5420	493	Augusta	9	Vassalboro	31	0		7.9	1	55.5
West Harbor	P	5372	526	Boothbay H	5	Boothbay	31	0		10.4	1	78.0
Wiley	P	5374	566	Boothbay	5	Boothbay	1	0		7.6	2	15.0
Wolf	P	5354		Woolwich	7	Boothbay	1	0		4.6	2	8.0

Continued

Table 1 (Continued)

Name	(1) Pond or Lake	MIDAS no.	Leaflet no.	Township	(2) County	USGS quad.	(3) Data source	(4) Municipal water supply	Elevation (m)	Max. depth (m)	(5) Stratification type	NWI (acres)
Region 3 (26 Lakes)												
Biscay	P	5710	529	Bremen	5	Waldoboro	48631	0	23	18.6	2	377.1
Boyd	P	5364	530	Bristol	5	Boothbay	8631	0	11	6.4	1	95.0
Cooks	P	5696	1276	Nobleboro	5	Waldoboro	81	0	38	9.5	2	68.6
Crystal	P	4900		Friendship	4	Monhegan	1	0	9	1.8	0	20.0
Damariscotta N	L	5400	533	Jefferson	5	Waldoboro	486312	1	16	34.8	2	2033.7
Damariscotta M	L	5400	533	Nobleboro	5	Waldoboro	486312	1	16	14.0	2	
Damariscotta S	L	5400	533	Nobleboro	5	Wiscasset	486312	1	16	10.4	2	
Duckpuddle	P	5702	536	Waldoboro	5	Waldoboro	8631	0	23	7.0	0	292.4
Fresh	P	5720		Cushing	4	Waldoboro	1	0	3			20.2
Gross	P	5714	540	Waldoboro	5	Waldoboro	481	0	27	18.0	2	10.5
Hastings	P	4860	541	Bristol	5	Monhegan	81	0	11	5.8	2	9.0
Havener	P	5718	1377	Waldoboro	5	Waldoboro	861	0	40	3.4	0	84.0
Howard	P	4866	1331	St. George	4	Monhegan	1	0	9	4.3	1	12.0
Kalers	P	5700	545	Waldoboro	5	Waldoboro	861	0	38	4.6	0	86.4
Little	P	5706	548	Damariscotta	5	Waldoboro	945812	1	34	13.7	2	79.5
Little Medomak	P	5694	550	Waldoboro	5	Waldoboro	81	0	69	7.9	1	78.9
McCurdy	P	5712	551	Bremen	5	Waldoboro	813	0	23	12.5	1	200.6
Medomak	P	5692	552	Waldoboro	5	Waldoboro	8613	0	38	7.6	0	236.7
Muddy	P			Damariscotta	5	Waldoboro	3					168.1
North	P	5690	519	Warren	4	Waldoboro	8613	0	10	12.5	1	330.9
Pemaquid	P	5704	555	Nobleboro	5	Waldoboro	48631	0	23	18.6	2	1530.0
Pemaquid R.												118.0
Seventree	P											72.3
Sidensparker	P	5722	559	Waldoboro	5	Waldoboro	861	0	41	4.3	0	151.8

Continued

Table 1 Continued

Name	(1) Pond or Lake	MIDAS no.	Leaflet no.	Township	(2) County	USGS quad.	(3) Data sources	(4) Municipal water supply	Elevation (m)	Max. depth (m)	(5) Stratification type	SWI (acres)
Region 3 (Cont.)												
South	P	5716	525	Warren	4	Waldoboro	361	0	11	5.5	0	551.7
Webber	P	4857	564	Bremen	5	Monhegan	8613	0	15	9.5	1	219.0
Whiteoak	P	7937		Warren	4	Waldoboro	1	0	15			56.6
Little				Bristol		Bristol						14.0
Region 4 (58 Lakes)												
Alamoosook	L	4336	304	Orland	1	Orland	486312	1	6	8.5	0	1170.1
Brewer	L	4284	313	Orrington	6	Orland	47831	0	35	14.6	2	563.5
Cain	P	5522	1033	Searsport	3	Castine	861	0	68	4.9	1	31.1
Chickawaukie	P	4822	503	Rockport	4	Rockland	486312	1	38	10.1	0	353.1
Coleman	P	4846	1036	Lincolnville	3	Belfast	861	0	46	13.4	2	221.6
Craig	P	4332		Orland	1	Orland	4381	0	66	21.0	2	234.2
Crawford				Warren		W. Rockport						90.6
Fields	P	4282	684	Orrington	6	Orland	4831	0	33	9.5	0	190.7
First	P	4650	309	Blue Hill	1	Blue Hill	8631	0	13	11.3	2	186.3
Frost	P	4646	1274	Sedgwick	1	Blue Hill	861	0	40	10.4	1	146.6
Georges	P	5558		Stonington	1	Deer Isle	31	0	5	3.4	0	6.4
Grassy	P	4812	509	Rockport	4	Rockland	8612	1	99	3.7	0	176.4
Halfmoon	P	5536	1043	Searsport	3	Bucksport	58612	1	100	12.5	2	163.1
Hammond	P	2294	693	Hampden	6	Bangor	81	0	37	4.6	0	97.7
Hancock	P	4318	350	Bucksport	1	Orland	4631	0	30	7.6	1	64.2
Heart	P	4338	353	Orland	1	Orland	31	0	53	21.0	2	79.1
Hosmer	P	4808	410	Camden	4	Rockland	81	0	96	4.9	0	50.0

Continued

Table 1 (Continued)

Name	(1) Pond or Lake	MIDAS no.	Leaflet no.	Township	(2) County	USGS quad.	(3) Data sources	(4) Municipal water supply	Elevation (m)	Max. depth (m)	(5) Stratification type	(6) Factor
Region 4 (Cont.)												
Hothole	P	4334		Orland	1	Orland	61	0	9			53.1
Jacob Buck	P	4322	356	Bucksport	1	Orland	861	0	63	15.9	2	185.4
Knight	P	5528	1045	Northport	3	Belfast	831	0	62	4.0	0	95.9
Laurenseller				Lincolnville		Searsmont						3.5
Lily	P	5550	363	Deer Isle	1	Deer Isle	341	0	27	6.4	1	29.3
Lilly	P	0083	513	Rockport	4	Rockland	81	0	11	7.3	1	32.1
Long	P	4316	366	Bucksport	1	Orland	631	0	19	8.8	1	164.9
Long	P	5562	1228	Isle Au Haut	4	Deer Isle	1	0	5	18.0	2	72.2
Maces	P	4820	515	Rockport	4	Rockland	81	0	107	3.0	0	28.9
Mason	P	5526		Belfast	3	Belfast	861	0	48	1.8	0	35.1
McClure	P	5524		Searsport	3	Castine	61	0	69			43.3
Meadow	P	5530	1051	Isleboro	3	Castine	81	0	19	4.6	1	27.6
Megunticook	L	4852	517	Camden	4	Belfast	48631	0	42	19.5	2	1304.7
Mirror	L	4814	518	Rockport	4	Rockland		1	114	20.1	2	119.8
Moody	P	4838	1053	Lincolnville	3	Belfast	861	0	106	7.9	2	61.2
Moulton				Bucksport		Orland						13.6
Mud	P	4314		Bucksport	1	Orland	1	0	52			32.0
Norton	P	4850	1054	Lincolnville	3	Belfast	8631	0	42	16.8	2	130.8
Noyes	P	4656	386	Blue Hill	1	Blue Hill	81	0	83	5.5	1	20.7
Parker	P	4632		Brooksville	1	Blue Hill	61	0	19			64.4
Patten	P	2292	1382	Hampden	6	Bangor	81	0	38	3.7	0	48.2
Pierce	P	4660	388	Penobscot	1	Blue Hill	3861	0	24	3.7	0	70.4
Pitcher	P	4848	1056	Lincolnville	3	Belfast	8631	0	62	11.6	0	375.0
Rocky	P	4816	520	Rockport	4	Rockland	81	0	72	4.6	1	162.1
Rocky	P	4330	390	Orland	1	Orland	3861	0	95	4.3	0	162.1
Round	P	5508	522	Vinalhaven	4	Vinalhaven	12	1	5	6.1	1	4.7

Continued

Table 1 (Continued)

Name	(1) Pond or Lake	MIDAS no.	Leaflet no.	Township	(2) County	USGS quad.	(3) Data sources	(4) Municipal water supply	Elevation (m)	Max. depth (m)	(5) Stratification type	[illegible]
Region 4 (Cont.)												
Second	P	4648	326	Blue Hill	1	Blue Hill	8613	0	28	7.0	1	79.4
Silver	L	5540	1574	Bucksport	1	Bucksport	45812	1	38	10.1	2	684.6
Swan	L			Searsport Frankfort		Bucksport						322.4
Swetts	P	5544	747	Orrington	6	Bucksport	831	0	57	7.3	1	127.0
Third	P	4652	405	Blue Hill	1	Blue Hill	8631	0	42	10.7	2	221.1
Thurston	P	4321	406	Bucksport	1	Orland	861	0	70	7.6	1	131.2
Toddy	P	4340	407	Surry	1	Blue Hill	486312	1	50	37.2	2	2411.7
Torry	P	5548	408	Deer Isle	1	Deer Isle	1	0	23	2.4	0	27.1
Upper Mason	P	4828	1068	Belfast	3	Belfast	861	0	58	3.0	0	75.2
Walker	P	4640	417	Brooksville	1	Blue Hill	8631	0	6	14.3	1	668.3
Wight	P	4662	421	Penobscot	1	Blue Hill	81	0	20	6.4	[illegible]	163.2
Williams	P	5538	422	Bucksport	1	Bucksport	93861	0	81	15.2	2	78.1
Region 5 (56 Lakes)												
Aunt Betty	P	4588	307	Bar Harbor	1	Mt. Desert	81	0	64	2.1	0	30.8
Big	P	1392		Steuben	2	Petit Manan	1	0	3			79.4
Birch Harbor	P	4468	310	Winter Harbor	1	Bar Harbor	12	1	27	10.9	2	17.4
Blunts	P	4550		Lamoine	1	Mt. Desert	812	1	53	2.1	0	31.9
Branch N	L	4328	311	Ellsworth	1	Orland	4863712	1	73	37.8	2	
Branch S	L	4328	311	Ellsworth	1	Orland	4863712	1	73	18.3	2	2971.0
Bubble	P	4452	314	Bar Harbor	1	Bar Harbor	813	0	101	11.9	0	32.3
Chicken Mill	P	4462	319	Gouldsboro	1	Bar Harbor	81	0	5	2.1	0	15.8
Donnell	P	4412	325	T09SD	1	Tunk Lake	4861	0	37	36.3	2	1153.4
Duck	P	4404	328	Franklin	1	Tunk Lake	81	0	53	6.4	2	45.0

Continued

Table 1 Continued

Name	(1) Pond or Lake	MIDAS no.	Leaflet no.	Township	(2) County	USGS quad.	(3) [illegible]	(4) Municipal water supply	Elevation (m)	Max. depth (m) *	(5) Stratification type	[illegible]
Region 5 (Cont.)												
Eagle	L	4606	331	Bar Harbor	1	Mt. Desert	8312	1	84	33.5	2	502.9
Echo	L	4624	333	Mt. Desert	1	Mt. Desert	4831	0	26	20.1	2	231.9
Flanders	P	4388	334	Sullivan	1	Tunk Lake	4861	0	37	9.8	1	538.6
Forbes	P	4464	1641	Gouldsboro	1	Bar Harbor	861	0	6	3.4	0	200.0
Fox	P	4438	338	T10SD	1	Tunk Lake	81	0	63	8.8	2	76.6
Georges	P	4406	339	Franklin	1	Tunk Lake	48631	0	50	13.7	2	380.5
Graham	L											3278.0
Great	P	4378	344	Franklin	1	Ellsworth	861	0	16	7.3	0	238.5
Green E	L	4294	347	Ellsworth	1	Ellsworth	486713	0	48	25.0	2	2258.8
Green W	L	4294	347	Ellsworth	1	Ellsworth	486713	0	48	51.8	2	
Halfmoon	P	0463	349	Bar Harbor	1	Mt. Desert	1	0	76	6.1	2	0.9
Hodgdon	P	4628	1532	Mt. Desert	1	Mt. Desert	81	0	15	6.7	1	37.9
Jones	P	4466	358	Gouldsboro	1	Bar Harbor	861	0	15	14.6	2	461.8
Jordan	P	4608	359	Mt. Desert	1	Mt. Desert	983612	1	84	45.7	2	172.4
Lily	P	4470		Gouldsboro	1	Bar Harbor	1	0	30			20.9
Little	P	4402		Franklin	1	Tunk Lake	1	0	73			36.8
Little Duck	P	4324		Ellsworth	1	Orland	1	0	52			60.2
Little Long	P	4424	1326	T10SD	1	Tunk Lake	861	0	72	25.3	2	67.9
Little Rocky	P	4326		Ellsworth	1	Orland	1	0	69			50.5
Little Round	P	4618	1460	Mt. Desert	1	Mt. Desert	1	0	23	5.2	1	13.6
Little Tunk	P	4386	365	Sullivan	1	Tunk Lake	861	0	71	7.3	1	146.2
Long Pond	P	4622	345	Mt. Desert	1	Mt. Desert	46123	1	18	34.5	2	906.6

Continued

Table 1 Continued

Name	(1) Pond or Lake	MIDAS no.	[illegible] no.	Township	(2) County	USGS quad.	* (3) Data sources	(4) Municipal water supply	Elevation (m)	Max. depth (m)	(5) Stratification type	SAI (acres)
Region 5 (Cont.)												
Long	P	0447	1372	Mt. Desert	1	Mt. Desert	861	0	2	1.5	0	31.7
Long	P	4430	368	T10SD	1	Tunk Lake	1	0	54	8.5	1	226.1
Long	P	4390	369	Sullivan	1	Tunk Lake	8612	1	72	17.4	2	63.6
Lower Breakneck	P	9655		Bar Harbor	1	Mt. Desert	81	0	78	3.6	1	47.6
Lower Hadlock	P	4610	372	Mt. Desert	1	Mt. Desert	812	1	57	12.2	2	34.6
Lower Patten	P	4344	374	Surry	1	Orland	3861	0	42	26.5	2	834.1
Lower W. Bay	P	4460		Gouldsboro	1	Bar Harbor	861	0	25			81.8
Morancy	P	4394	381	Sullivan	1	Tunk Lake	81	0	29	4.3	2	59.3
Myrick	P	4416	1572	T10SD	1	Tunk Lake	61	0	70	3.7	1	46.7
Narraguagus	L	4414	384	T09SD	1	Tunk Lake	861	0	68	10.4	1	255.0
Rainbow	P	4436	1573	T10SD	1	Tunk Lake	1	0	102	4.6	0	17.5
Round	P	4620		Mt. Desert	1	Mt. Desert	581	0	23	5.8	1	12.6
Round	P	0563		T10SD	1	Tunk Lake	61	0	48	7.9	0	252.7
Salmon	P	4422		T10SD	1	Tunk Lake	1	0	88	10.7	2	7.7
Schoodic	L	1230	1144	Cherryfield	2	Cherryfield	461	0	68	11.3	1	406.3
Seal Cove	P	4630	395	Tremont	1	Mt. Desert	38612	1	12	13.4	2	240.0
Simmons	P	4374	398	Hancock	1	Ellsworth	381	0	52	8.2	2	13.0
Somes	P	4614	399	Mt. Desert	1	Mt. Desert	8613	0	12	7.6	1	90.8
Spring River	L	4432	402	T10SD	1	Tunk Lake	861	0	57	8.5	0	708.9
Tarn The		4456	404	Bar Harbor	1	Bar Harbor	81	0	30	1.2	0	20.4
Tilden	P	4418	1328	T10SD	1	Tunk Lake	81	0	69	10.7	2	39.5
Tunk	L	4434	409	T10SD	1	Tunk Lake	9861	0	63	67.7	2	2121.4
Upper Breakneck	P	9657		Bar Harbor	1	Mt. Desert	1	0	78	5.4	0	
Upper Hadlock	P	4612	412	Mt. Desert	1	Mt. Desert	312	1	70	14.3	2	37.5
Upper Patten	P	4342	415	Surry	1	Orland	8631	0	50	9.8	2	338.5

Continued

Table I Concluded

Name	(1) Pond or Lake	MIDAS no.	Leaflet no.	Township	(2) County	USGS quad.	(3) Data sources	(4) Municipal water supply	Elevation (m)	Max. depth (m)	(5) Stratification type	SSI (acres)
Region 6 (Cont.)												
Patrick	L	1380	1124	Marion	2	Gardner Lake	1	0	39	9.8	1	298.0
Peaked Mountain	P	1254	1125	Centerville	2	Wesley	1	0	70	14.6	1	91.0
Pennamaquan	L			Pembroke		Pembroke						55.9
Pine	L			Calais		Red Beach						34.5
Rand	L	1432	1138	Robbinston	2	Robbinston	1	0	83	4.9	1	19.3
Roaring	L	1412	1256	Whiting	2	Whiting	61	0	27	3.0	0	67.9
Rocky	L	1368	1139	Whiting	2	'Gardner Lake	1	0	27	10.1	1	1042.6
Roque Bluffs	L			Roque Bluffs		Roque Bluffs						32.9
Second	L	1374	1403	Marion	2	Gardner Lake	61	0	23	7.6	0	1533.4
Second Marks	L	1276	1146	Marshfield	2	Wesley	61	0	62	6.7	2	50.4
Shattuck	L	1426	1147	Calais	2	Robbinston	861	0	60	5.2	0	29.1
Shiny	L	7433		Marion	2	Gardner Lake	1	0	35			25.9
Six Mile	L	1280	1149	Marshfield	2	Wesley	461	0	65	6.7	1	58.6
Sunken	L	1368	1139	Whiting	2	Gardner Lake	9861	0	27	3.7	0	52.1
Vose	P	1416		Calais	2	Robbinston	61	0	35			43.7
Western	L	1436	1162	Robbinston	2	Red Beach	861	0	80	4.3	0	74.5

Table 1 Continued

[illegible]	(1) Pond or Lake	MIDAS no.	Leaflet no.	Township	(2) County	USGS quad.	(3) Data sources	(4) Municipal water supply	Elevation (m)	Max. depth (m)	(5) Stratification type	[illegible]
Region 5 (Cont.)												
Witchhole	P	4458	423	Bar Harbor	1	Bar Harbor	81	0	55	10.1	2	26.1
Wood	L	0435	361	Mt. Desert	1	Mt. Desert	861	0	37	3.4	0	21.2
Region 6 (37 Lakes)												
Beaver	L	1414		Calais	2	Robbinston	1	0	48			89.9
Boyden	L	1404	1077	Perry	2	Robbinston	48612	1	23	10.4	0	1729.7
Eastern	L	1440	1084		2	Red Beach	861	0	75	11.6	2	37.5
Gardner	L	1358	1091	Marion	2	Gardner Lake	461	0	201	17.1	0	3693.8
Goulding	L	1434	1092	Robbinston	2	Robbinston	81	0	97	7.9	2	20.2
Hadley	L	1352	1093	East Machias	2	Gardner Lake	461	0	12	9.5	0	1688.3
Hobart	L	1388	1094	Edmunds	2	Gardner Lake	1	0	37	6.4	1	90.1
Howard	L	1428	1097	Robbinston	2	Robbinston	861	0	49	15.2	2	543.5
Indian	L	1242	1098	Whiting	2	Gardner Lake	1	0	37	6.1	0	126.4
Josh	P	1366		Whiting	2	Gardner Lake	1	0	21			61.6
Keeley	L	1278	1101	Marshfield	2	Wesley	61	0	60	12.5	2	38.2
Keenes	L	1424	1102	Calais	2	Robbinston	861	0	59	11.3	2	100.4
Lily	L	1354		East Machias	2	Gardner Lake	1	0	82			39.7
Lily	L	1396	1105	Trescott	2	Eastport	861	0	32	2.1	0	22.1
Little	L	1410		Whiting	2	Whiting	1	0	22			38.6
Little Lily	L	1356	1108	Marshfield	2	Gardner Lake	1	0	67	6.7	2	8.5
Long	L	1370		Marion	2	Gardner Lake	1	0	35			129.0
Marks	L	1282	1402	Marshfield	2	Wesley	1	0	41	8.3	1	179.9
Nash	L	1418	1118	Calais	2	Robbinston	861	0	51	17.1	1	834.7
Orange	L	1364	1121	Whiting	2	Gardner Lake	61	0	23	7.3	0	246.5
Moneymaker	L	1434	1494	Robbinston	2	Robbinston	81	0	71	11.9	2	26.7

Continued

Table 2. Water Chemistry, Color, Conductance, Temperature, and Transparency.

	Epilimnion (surface)									Hypolimnion (bottom)						
	Temp °C	Temp °F	Cond. (µmhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Cholorophyll (ppb)	S.D. Transp (m)	Temp (°C)	Cond. (µmhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Oxygen (ppm)
Region 1																
3743	(25.0°c)	77.0	42	6.0	6.8	W		10.0	5.5	9.1	10.0			5.7		4.8
5648	(26.6)	78.0			6.3	B					25.0			6.3		4.0
Region 2																
0277	(24.0)	75.2			6.4	LB										
5222	(23.0)	73.4		4.0	6.7	W		12.0	2.3	4.7	11.0			5.7	15.0	2.5
5224	(20.0)	68.0			6.0	W					17.2			6.0		7.6
5226	(24.4)	[illegible]			5.8	W					20.7			5.4		1.6
5228	(24.4)				7.2	W					12.0			6.2		0.6
5232	(24.0)	75.2			5.4	B					10.0			5.4		0.0
5244	(22.0)	71.6	39	3.0	6.8		44	9.0	5.2	4.1	6.0	35	4.0	5.9		5.5
5254	(22.0)	71.6			7.2	LB		28.0	8.2	2.5	19.0			5.6		0.0
5304	(24.0)	75.2	30	4.0	6.8	B		13.0	6.9	4.5	13.0	40	5.0	6.3		1.0
5336	(24.0)	75.2	52		6.8		29							6.8		5.0
5354	(19.0)	66.2		5.0	5.6	B					7.0		9.0	5.4		0.0
5358	(26.0)	78.8			7.2	LB										
5268	(21.0)	69.8		7.0	6.8	W		14.0		5.8	10.0			6.1		1.0
5370	(25.0)	77.0			6.0	DB										
5372	(20.0)	68.0		12.0	7.0	WC		8.0		2.0	11.0			6.7		0.0
5374	(22.0)	71.6			6.0	DB					8.0			5.6		0.0
5376	(24.0)	75.2			6.4	B					11.0			6.0		1.0
5378	(23.0)	73.4		10.0	6.8											
5402	(22.0)	71.6			5.8	W										
5404	(24.0)	75.2			6.6	B					20.0			6.0		1.5
5406	(23.0)	73.4		10.0	6.6	B		15.0			14.0			6.0	30.0	1.0

Table 2 (continued)

	Epilimnion (surface)										Hypolimnion (bottom)						
	Temp °C	Temp °F	Cond. (μmhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Cholorophyll (ppb)	S.D. Transp (m)	Temp (°C)	Cond. (umhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Oxygen (ppm)
Region 2																
5410	(22.0)	71.6			7.2		25.0			5.0			6.2		11.0	5.0
5418	(23.0)	73.4		7.0	6.8	W				16.0			6.3		14.0	5.0
5420	(21.0)	69.8			7.0		10.0			12.0			6.0		11.0	0.0
5422	(22.0)	71.6			6.6	LB				7.0			5.7			1.0
5424	(22.0)	71.6	46	4.0	7.0		26.0	8.2	3.4	12.0		5.0	6.2		14.0	0.0
5428	(20.0)	68.0			6.7		18.0			18.0			6.6			6.0
5432	(22.0)	71.6			6.7	B				17.0			6.5			4.0
5436	(25.0)	77.0			6.6	W				12.0		6.0				6.0
9943	(24.0)	75.2			6.0	DB										
9931	(27.0)	80.6	50	10.0	7.0	15	16.0	3.4	5.1	13.0	49	19.0	6.4	100	63.0	0.0
Region 3																
4857	(21.6)	70.9			6.8		12.6			14.3			6.1			0.0
4860	(23.4)	74.1			5.8	B				7.8			5.6			0.0
4866	(23.9)	75.0			5.8	DB				15.0						1.8
4900	(28.9)	84.0			5.8	B				28.9			5.8			8.0
5364	(23.6)	74.5			6.3	B			3.9	18.4		8.0	6.1			2.0
5400	(24.8)	76.6			7.2		0.1		4.0	13.5			6.5		13.3	0.0
5400	(23.0)	73.4			7.2	G	0.1		4.5	10.3			6.3		37.5	3.5
5690	(18.9)	66.0		8.0	6.4	B	30.3		4.0	11.1			6.5		75.6	0.0
5692	(21.3)	70.3			7.1		17.1			18.7			6.8			8.6
5694	(18.0)	64.4		6.0	6.9	W			5.5	12.2			6.0			0.8
5696	(19.5)	67.1			6.4	LB				10.0			6.2			0.0

Table 2 (continued)

	Epilimnion (surface)									Hypolimnion (bottom)						
	Temp °C	Temp °F	Cond. (umhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Cholorophyll (ppb)	S.D. Transp (m)	Temp (°C)	Cond. (umnos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Oxygen (ppm)
5700	(26.1)	79.0			6.0	W				22.2			6.0			6.8
5702	(18.3)	64.9		7.0	6.8	B			2.4	17.2			6.8			9.5
5704	(18.5)	65.3	32	13.0	6.4	20	7.0	16.1	4.0	11.0	46	26.0	6.1	80	35.0	0.0
5706	(20.6)	69.1	43	5.0	8.3	20	8.0	6.3	4.4	6.7		11.0	5.9	55	95.0	0.5
5710	(21.0)	69.8	32	8.0	6.4	20	7.0	4.3	5.0	10.0	35	9.0	6.1	70	27.0	0.1
5712	(21.5)	70.9			6.7		0.1			14.0			6.1		0.1	0.0
5714	(26.7)	80.1			5.2	W				5.0			5.5			0.0
5716	(22.8)	73.0			6.9	LB	8.0			21.0			6.8		26.0	9.0
5718	(24.5)	76.1		10.0	6.4	DB				23.4			6.2			6.6
5722	(21.7)	71.1		6.0	6.4	W							6.4			7.4
5720																
7937																
Region 4																
0083	(22.9)	73.2			8.2	LB				14.5			6.9			0.0
4282	(23.4)	74.1			6.8		20.9			21.9			6.4			6.0
4284	(22.4)	72.3	31	8.0	6.9		12.0	3.8	4.5	14.2			5.3			0.5
4316	(23.3)	73.9			7.0		20.0			13.8			6.3			0.0
4318	(23.3)	73.9			7.1		3.0	24.5	1.3	12.2			6.2			1.4
4321	(22.8)	73.0		4.0	6.6	W				12.8		7.0	5.9			1.8
4330	(23.3)	73.9			7.0	LB	9.0			20.6			6.4			8.4
4332	(21.0)	69.8		10.0	6.6	C	19.9		11.5	8.9		13.0	5.8			9.0
4336	(21.1)	70.0	44		6.9	LB	11.3		4.0	20.6	41		7.0			9.0
4338	(23.9)	75.0		9.0	6.8	C	10.6			6.4		3.0	5.4			7.0

Table 2 (continued)

	Epilimnion (surface)									Hypolimnion (bottom)						
	Temp °C	Temp °F	Cond. (µmhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Cholorophyll (ppb)	S.D. Transp (m)	Temp (°C)	Cond. (µmhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Oxygen (ppm)
4340	(23.3)	73.9			7.0	LB	9.0			20.6			6.4			8.4
4340	(23.3)	73.9			6.7		20.8		6.5	6.0			5.9			8.9
4640	(22.2)	73.2			6.5	W	16.5			16.7			6.0			2.5
4646	(24.4)	75.9		7.0	6.4	LB				15.6			5.4			0.4
4648	(23.0)	73.4			6.4		12.3			11.6			6.2			0.2
4650	(22.2)	72.0			6.4	LB	16.0			11.1			5.8			0.4
4652	(23.1)	73.6		8.0	6.1	C	7.3			14.2		23.0	6.1			0.6
4656	(20.6)	69.1			6.0	DB				12.8			5.7			0.0
4660	(22.2)	73.2				LB	5.8			21.1						
4662	(20.0)	68.0		10.0	6.8	B			3.0	11.7		9.0	6.1			3.0
4808	(22.6)	72.7			7.0	LB				22.1			6.2			2.7
4812	(21.7)	71.1		10.0	6.6	W				21.1			6.6			8.0
4816	(23.1)	73.6			6.6	LB			3.0	20.3		0.0	6.5			7.8
4820	(22.3)	72.1		0.0	6.5				2.0	19.4		0.0	6.5			6.2
4822	(21.0)	69.8	7	12.0	7.2		8.3	2.4	4.3	21.0	8	15.0	7.2		7.0	8.9
4828	(23.9)	75.0			6.0	W				23.9			5.6			7.2
4838	(24.5)	76.1			6.5	C				10.0			6.0		8.0	6.5
4846	(25.0)	77.0			7.0	W				7.8			6.0			1.2
4848	(20.5)	68.9			6.8		15.1			20.0			6.7			9.5
4850	(21.1)	70.0		13.0	7.0	W	10.7		5.5	6.7		15.0	5.8		10.4	1.2
4852	(21.0)	69.8	45	18.0	6.9	20	11.0	3.6	5.8	10.5	36	15.0	6.0	90	21.9	0.5
4852	(21.0)	69.8			7.1	G	12.4	3.2	6.4	6.5			6.0		15.0	0.5
5504	(22.5)	72.5		19.3	6.9	LB				21.2		18.3				7.0
5508	(22.3)	72.1			6.6					16.7			6.2			6.2
5522	(24.5)	76.1			6.8	LB				16.7			6.2			0.6
5526	(23.4)	74.1			6.4	LB				23.4			6.2			6.4
5528	(20.3)	68.5			6.6					19.3			6.6		11.5	9.6

Table 2 (continued)

	Epilimnion (surface)									Hypolimnion (bottom)						
	Temp °C	Temp °F	Cond. (umhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Cholorophyll (ppb)	S.D. Transp (m)	Temp (°C)	Cond. (umhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Oxygen (ppm)
5530	(17.6)	63.7		9.0	6.4	B	0.3		1.4	15.0			6.0			0.0
5536	(23.6)	74.5			6.8	W				11.7			5.8			2.6
5538	(24.4)	75.9			6.6		6.5			5.7			5.5			0.0
5540	(21.4)	70.5		11.0	7.0	LB			4.0	13.9		36.0	7.0			0.0
5544	(21.8)	71.2			6.8		8.0			12.7			6.2			0.0
5548	(21.7)	71.1			5.7	LB				20.0			5.7			8.2
5550	(23.5)	74.3		8.0	9.2	LB	30.0	6.8	5.4	11.5		19.0	6.5			1.0
5562	(21.0)	69.8		2.0	6.7	W			9.1	7.5			6.0			0.3
Region 5																
0435	(23.9)	75.0			6.6	W				22.2			6.6			7.6
0447	(22.8)	73.0		4.0	6.8	C				23.3		3.0	6.8			6.8
0463	(20.6)	69.1		9.0	6.7	C				11.1		13.0	5.9			3.6
0563	(26.1)	79.0		3.0	6.3	C				23.9			6.2			3.8
1230	(22.2)	72.0			7.2	C			4.0	14.4			6.1			9.0
4294	(22.6)	72.7		7.0	6.8		4.0	1.5	8.7	4.6			6.0			10.7
4294	(22.5)	72.5	29	7.0	6.8		13.0	2.2	7.5	9.8			5.8			6.6
4328	(20.0)	68.0	31	4.0	6.7	C	8.0	2.4	7.3	10.6	26	5.0	6.3			7.0
4328	(20.6)	69.1	29	4.0	6.8	C	5.0	2.3	6.7	7.8	26	3.0	6.3			11.0
4342	(25.3)	77.5			6.3		5.4			8.3			6.0			0.0

Table 2 (continued)

	Epilimnion (surface)										Hypolimnion (bottom)					
	Temp °C	Temp °F	Cond. (µmhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Cholorophyll (ppb)	S.D. Transp (m)	Temp (°C)	Cond. (µmhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Oxygen (ppm)
4344	(18.9)	66.0		4.0	6.7	W	4.6			7.8		3.0	6.3			4.0
4374	(23.9)	75.0		11.0	5.8		22.1			6.9			5.1			0.0
4378	(23.3)	73.9			6.4	LB				18.9			6.0			2.0
4386	(22.8)	73.0			6.7					15.0			6.0			6.0
4388	(22.5)	72.5		0.0	6.6					16.7		10.0	6.0			1.2
4390	(17.4)	63.3			5.9	C				5.6			5.6			0.4
4394	(22.8)	73.0			5.9	DB				14.2			5.7			1.8
4404	(19.9)	67.8			6.5	W				11.9		-	5.7			2.6
4406	(20.0)	68.0		4.0	6.5	W	21.0		5.5	12.5		16.0	6.5			0.0
4412	(23.3)	73.9		14.0	6.6					10.0		12.0	6.0			5.4
4414	(19.4)	66.9		9.0	5.8	LB				11.1		7.0	5.4			3.8
4416	(23.3)	73.9		3.0	6.2	B			1.5	16.7		3.0	5.5			2.0
4418	(23.8)	74.8		7.0	6.7	C				10.3		9.0	5.6			1.6
4422	(18.5)	65.3		4.0	6.8	W			5.5	7.0		7.0	5.7			0.0
4424	(23.1)	73.6		7.0	6.4	C				7.2		9.0	5.5			6.4
4430	(25.6)	78.1			6.2	C				19.4			5.9			4.6
4432	(23.5)	74.3			6.6					20.0			6.0			9.0
4434	(22.2)	72.0	26	17.2	6.7	C			11.6	6.3	25	17.2	6.0			14.0
4436	(19.4)	66.9		4.0	6.5	W			4.6	18.9		5.0	6.5			10.0
4438	(23.3)	73.9			6.4	W				9.4			5.6			1.2
4452	(20.2)	68.4			6.8		1.7			19.8			6.8			
4456	(21.7)	71.1			5.0					20.8			5.0			3.9
4458	(18.9)	66.0		15.0	5.9	C				12.2		8.0	5.8			0.2
4462	(20.0)	68.0			6.3	B				17.2			6.1			6.7
4464	(21.7)	71.1		6.0	6.2	B			2.1	18.9		4.0	6.2			10.0
4466	(23.3)	73.9		2.0		LB			3.4	11.4		2.0				

Table 2 (continued)

	Epilimnion (surface)									Hypolimnion (bottom)						
	Temp °C	Temp °F	Cond. (umhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Cholorophyll (ppb)	S.D. Transp (m)	Temp (°C)	Cond. (umhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Oxygen (ppm)
4468	(22.8)	73.0			6.0	W				5.9			6.1			0.4
4550	(23.9)	75.0		1.0	4.8	C			2.1	23.9		1.0	4.9			9.0
4588	(17.8)	64.0		11.0	6.3	LB				17.2		12.0	5.7			7.2
4606	(19.8)	67.6		5.0	6.5	W	2.8		10.4	8.9		4.0	5.7			5.8
4608	(20.0)	68.0	41	3.0	6.8		4.0	3.0	15.7	6.0	44		6.5	0	4.5	10.0
41.0	(23.3)	73.9			6.7					6.7			6.3			3.0
4612	(23.9)	75.0			6.6	C	1.5			11.1			5.5			3.0
4614	(21.0)	69.8			6.2		7.1			12.4			5.9			0.0
4618	(26.7)	80.1		6.0	6.6	LB				21.1			6.2			7.0
4620	(24.4)	75.9			7.0	LB				17.8			6.0			5.2
4622	(20.6)	69.1			6.7		5.3		6.0	8.3			6.3			9.4
4624	(22.5)	72.5		6.8			4.0	3.4	8.0	13.0			6.0			4.4
4628	(24.4)	75.9		4.0	6.6	LB			3.7	17.2		22.0	6.7			0.0
4630	(24.4)	75.9		4.0	6.7	C	7.3			16.7			6.2			1.0
9655	(19.4)	66.9		8.0	6.1	C				13.3		20.0	6.0			0.4
9657	(19.4)	66.9		15.0	6.6	C				18.3		14.0	6.6			8.4
Region 6																
1242	(24.0)	75.3			7.2	W				22.0			6.7			9.0
1254	(21.6)	70.9			5.8	W				13.8			5.7			0.6
1276	(18.3)	64.9			5.7	LB				11.7			5.3			1.4

Table 2 (concluded)

	Epilimnion (surface)										Hypolimnion (bottom)						
	Temp °C	Temp °F	Cond. (umhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Cholorophyll (ppb)	S.D. Transp (m)	Temp (°C)	Cond. (umhos/cm)	Alk. (as ppm $CaCO_3$)	pH	(1) W. Color	(2) Total P (ppb)	Oxygen (ppm)
1278	(18.9)	66.0				W				7.2			5.4			3.4
1280	(22.8)	73.0		0.5	6.4	W			5.8	15.6			5.5			5.2
1282	(21.1)	70.0		12.0	5.4	B				10.6		14.0	5.4			3.0
1352	(22.8)	73.0			6.6	LB			3.8	21.1			6.2			7.2
1356	(19.5)	67.1			5.3	B				7.7			5.3			2.2
1358	(21.7)	71.1			6.4	W			5.0	20.0			6.2			6.6
1364	(22.2)	73.0			6.1	W				20.0			6.2			5.8
1368	(21.7)	71.1			7.0	LB				21.6			6.1			8.0
1374	(23.9)	75.0		14.0	5.9	LB				23.3		14.0	5.7			8.5
1380	(22.2)	72.0			6.3	LB				15.0			6.0			1.2
1388	(22.2)	72.0			6.8	LB				17.8			5.9			3.6
1396	(22.8)	73.0			6.3	LB				21.1			6.3			7.0
1404	(18.3)	64.9			6.8				3.5	18.3			6.8			8.8
1412	(23.9)	75.0			6.4	LB				21.1		12.0	6.3			6.6
1418	(18.9)	66.0			6.4	W				10.6			5.9			1.8
1424	(23.4)	74.1			5.8	W				8.8			5.8			1.4
1426	(24.4)	75.9			7.3	C				22.2			6.9			5.4
1428	(22.2)	73.2			7.2	W				11.7			6.0			2.8
1432	(19.4)	66.9			6.5	DB				11.1			5.7			3.0
1434	(23.1)	73.6			6.5	B				10.9			5.7			6.0
1436	(24.4)	75.9		7.0	6.5	W				23.3		7.0	6.5			7.6
1438	(23.9)	75.0			7.4					7.2			6.0			3.0
1440	(20.0)	68.0			6.7					7.2			5.7			2.0

Table 3 Fishery Data, Pollution and Other Problems, and Other Biological and Chemical Data

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Key:

1. 0=absent; 1=present; 2-9=present (special, see below)

Order

1 = American eel
2 = minnows (other than golden shiner)
3 = yellow perch
4 = chain pickerel
5 = golden shiner
6 = white sucker
7 = white perch
8 = sunfish
    pumpkinseed sunfish - 2
    redbreast sunfish - 5
    yellow bellied sunfish - 6
    7 = mixed sunfish population (2 or more)
9 = hornpout (bullhead)
10 = largemouth bass
11 = smallmouth bass
12 = brook trout (squaretail)
13 = banded killifish
14 = brown trout
15 = alewife
16 = smelt
17 = salmon
18 = sticklebacks
    3 = 3-spine
    4 = 4-spine
    9 = 9-spine
    8 = mixed stickleback (2 or more)
19 = lake trout (togue)
20 = sea lamprey
21 = rainbow trout
22 = sea-run alewife
23 = sea-run salmon
24 = American eel
25 = sunapee trout

2. 1=high, 2=moderate, 3=low, 4=nil, 9=unknown

Column

33 existing cold water fishery
34 potential cold water fishery
35 existing warm water fishery
36 potential warm water fishery

Continued

Table 3 (Continued)

Key (Continued):

3. 1=warm water, 2=cold water, 3=both warm & cold water, 0=no fishery, 9=unknown

4. 1=functional dam at outlet, 2=functional fishway, 3=functional fish screen

5. Column

42	1=yes, 2=no, 0=unknown
43 & 44	last two digits of year of reclamation

6. Column

48-49	species stocked (see species list in 1, above; 12=brook trout)
50-51	last two digits of year of stocking

7. Double digit entries, right justified

    entries 04-25: species stocked (see species list in 1, above)
    entries 25: last two digits of year of stocking

8. Column

65	0=none known, 1=copper sulfate, 2=cutrine
66 & 67	last two digits of year of application

9. 0=none observed, 1=yes

10. 0=none observed, 1=yes

11. 0=none observed, 1=yes

12. See data sources for details

    0 - detailed study available
    1 - phytoplankton data available
    2 - zooplankton data available
    3 - cation data available
    4 - anion data other than N available
    5 - silica data available
    6 - nitrogen data available
    7 - fish kills observed
    8 - smelt egg transfer made
    9 - benthos data available

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 1												
3734	111111121111010100000000010	9999	3		0		1474	0	0	0	0	1094536
5648	101100000100000000000001010	4422	1		0			0	0	0	0	7
Region 2												
0277	111010100100000000000001010	4411	1		0		10	0	0	0	0	
5220	0 0000	9999	9									
5222	111111171111101110000101 0	2222	3	2	0		1712	0	0	0	0	
5224	001010121010100000000000000	9999	1		0		0	0	0	0	0	
5226	001100000000000000000000000	4432	1		0			0	0	0	0	
5228	011100020000000000000000000	4433	1		0			0	0	0	0	
5232	111010000000001000000000010	4433	1		0		14	0	0	0	0	
5244	111111021011110100000000010	4433	3		0			0	0	0	0	
5254	111111121110000000000000010	4411	1		0		10	0	0	0	0	10
5304	111111121100000000000000010	4411	1		0			0	0	0	0	

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 2 (Cont.)												
5336	0100110201011000000000000	4332	1	3	0			167	0	0	0	
5354	0001000000010000000000000	9999	9		0			0	0	0	0	
5358	1011000001000000000000010	4422	1		0			0	0	0	0	
5368	1100011011010110000001010	3222	3		0		12	0	0	0	0	
5370	1000000001100001000000010	9999	1		0			0	0	0	0	
5372	1110111201100110000001010	3222	3		0			1	1	0	1	219
5374	0000000000010000000000000	2144	2		0		12	0	0	0	0	
5376	1101100010000000000000010	4422	1		0		10	0	0	0	0	
5378	1111110211000010000001010	4422	1		0			0	0	0	0	
5402	1100110200001100000000010	3331	3	3	0		14	0	0	0	0	
5404	1100111001000010000001010	4411	1		0		10	0	0	0	0	
5406	1111000200100000000001010	4422	1		0			0	0	0	0	219
5410	1111011710011100000000010	3333	2		0			0	0	0	0	219
5418	1111100201000000000000010	4411	1		0		10	0	0	0	0	219
5420	1011000200000000000000010	4433	1		0			0	0	0	0	219

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 2 (Cont.)												
5422	10010110100110010000000010	3333	3		0		12	0	0	0	0	219
5424	11110112111010000000000010	4411	1		0		10	0	0	0	0	219
5428	10110112101000000000000010	4422	1		0			0	0	0	0	219
5430	1 0010	4422	1		0			0	0	0	0	
5432	11111000100000000000000010	4433	1		0			0	0	0	0	
5436	11111002100000000000000010	4433	1		0			178	0	0	0	219
9931	11111112101011000000000010	2211	3		0			0	0	0	1	
9943	11111112010000100000001010	4422	1		0							
Region 3												
4857	11110112101000100000001010	4433	1		0		1156	0	0	0	0	129
4860	11001000000010000000000010	2244	2		0			0	0	0	0	

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 3 (Cont.)												
4866	1100100000001000000000010	9999	0		0			0	0	0	0	
5364	1011011210100100000001010	3332	3	2	0			0	0	0	0	219
5400	1111111210101011101001010	3222	3	2	0		19721777	0	0	0	0	2190
5690	1111111210101110000001010	2929	3		0		1468	0	1	0	0	219
5692	1111111210110000000001010	2232	1		0			0	0	0	0	219
5694	1101011200000101000000010	2222	3		0			0	0	0	0	
5696	1111111210100000000000010	4411	1		0			0	0	0	0	
5700	1001010210000100000000010	1122	1		0		1567	0	0	0	0	
5702	1111111210000100000001010	2222	3		0		1467	0	0	0	0	219
5704	1111011210101111000001010	2222	3		0		14	0	0	0	0	129
5706	1000000200110001000000010	4242	1		0			172	0	0	0	0
5710	1111011210101111100001010	2222	3	2	0		1776	0	0	0	0	219
5712	1111001210100001000000010	4411	1		0			0	0	0	0	219
5714	1100100000011100000000010	2244	2		0			0	0	0	0	

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 3 (Cont.)												
5716	1111111210101110000000101C	9999	1		0		1468	0	0	0	0	129
5718	10010002100000000000000010	4422	1	1	0		1067	0	0	0	0	
5722	11111112110010000000000010	4422	1		0		1059	0	0	0	0	346
4900		9999	9									
5720		9999	9									
7937		9999	9									
Region 4												
0083	11010112101000000000000010	4929	1		0			0	0	0	0	
4282	11111117101010000000000010	4421	1		0			0	0	0	0	219
4284	11110112100010001000000010	3321	1		0			0	0	0	0	20965431
4316	11111117001110101000001010	9999	1		0			0	0	0	0	12
4318	10010102000100010000000010	2929	3		156			0	0	0	0	12

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water•level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 4 (Cont.)												
4321	1110111210001000000000010	2393	2		0			0	0	0	0	
4322	1101111700011001000000010	2939	3		0		12591777	0	0	0	0	
4330	1110010210110000000000010	3929	1		0			0	0	0	0	12
4332	1100010200011001181000010	2939	2		0		1277	0	0	0	0	12
4334	1 0010	9999	9									
4336	1111011200111110140001010	3919	1	2	0			0	0	0	1	12
4338	1110010700011101101000010	3949	2		0		12591475	0	0	0	0	12
4340	1100111010110111101001010	2221	3		0		197612641777	0	0	0	1	12
4632	1000	9999	9									
4640	1110111200111011100001010	3221	3		0			0	0	0	0	217
4644	0001000001100000000000000	9999	1		0			0	0	0	0	
4646	1110111210001000000001010	3333	1		0			0	0	0	0	
4648	1100000200000000090000010	4433	9		0			0	0	0	0	12
4650	1100111210010000000000010	3232	2	1	0		12	0	0	0	0	12

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 4 (Cont.)												
4652	11001112000110000000000010	3221	1		0			0	0	0	0	12
4656	01001000000100000090000000	2244	2		0			0	1	0	0	
4660	11101112110010000000000010	4929	1		0		1055	0	0	0	0	12
4662	11111112110000100000000010	4919	1		0			0	0	0	0	
4808	11110112101001000000000010	3929	1		0			0	0	0	0	
4814	10010000000000000000000010	9999	0		0			178	0	0	0	219
4816	01011112101001000000000000	3939	1		0			0	0	0	0	
4820	11111012100000000000000010	4929	1		0			0	0	0	0	
4822	11111117101011010000000010	2929	3		0		14	0	0	0	0	219
4828	11111102100010000000001010	4929	1		0			0	0	0	0	
4838	10010100101100000000000010	2929	3		0			0	0	0	0	
4846	11101112101010000000001010	4919	1		0			0	0	0	0	
4848	11111112101000010000001010	4929	1	2	0			0	0	0	0	129
4850	11110112101100011000000010	3929	1		0			0	0	0	0	219
4852	11111112100110011000100010	2939	3		0		2174	0	0	0	0	219
5504	10100112010000000000001010	2929	1		0		10641572	0	0	0	0	34
5508	10000112000000000000000010	4939	1		0			0	0	0	0	

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 4 (Cont.)												
5522	1001000210000000000000010	4929	1		0		1075	0	0	0	0	
5524	1000000000000000000000010	9999	9		0			0	0	0	0	
5526	1111110201110100000000010	4929	1		0			0	0	0	0	
5528	1111111210100010000000010	4929	1		0			0	0	0	0	219
5530	1101101000000000000000010	4929	1		0		0456	0	0	0	0	634
5536	1000000200110000000000010	2929	3		0		1277	172	0	0	0	7
5538	1110101210110000000000010	4929	1		0			0	0	0	0	19
5540	0111101710100000030000000	4919	1		0			278	0	0	1	
5544	1111011210100000000000010	3321	1		0			0	0	0	0	129
5548	1000010001001000090000010	9999	1		0		1059	0	0	0	0	
5550	1000010000001000000000010	9999	2		157	1277		0	0	0	0	1
5558	0100100200001000090000000	9999	1		0							
5562	1100100000000001090010010	2199	2		0		12 17 2177	0	0	0	0	534
4314		9999	9									
4812	1011010010000000000000010	4929	1		0		1072	0	0	0	0	

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 5												
0435	0100110000001001000000000	3333	0		0			0	0	0	0	
0447	1100100200011010080001010	2222	9		0			0	0	0	0	
0463	0100100000011000000000000	9999	2		0		1277	0	0	0	0	
0563	1100110700011001180000010	2233	2		0		1765	0	0	0	0	
1230	1101010000110001100000010	9999	3		0		12661776	0	0	0	0	
4294	1111011210111001131000010	2133	3	1	0		177612701977	0	0	0	0	09654321
4328	1111010710110101101000010	2122	3		0		145312711777	0	0	0	1	0543219
4342	1110111200011111100001010	3322	1		0			0	0	1	0	12
4344	1111111010011111100001010	2222	3		0		17751262	0	0	0	0	219
4374	0000000000010000000000000	1133	2		167	1267		0	0	0	0	12
4378	1111101200010010000001010	3311	1	2	0			0	0	0	0	
4386	1100110200011000030000010	3233	2		0		1277	0	0	0	0	
4388	1100110200011011130001010	2232	2	2	0		127517701477	0	0	0	0	
4390	1100110000011001100000010	3133	2		0			0	0	0	0	
4394	0101010000010000000000000	3233	3		0			0	0	0	0	

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 5 (Cont.)												
4404	01110012000000000000000000	3122	1		0			0	0	0	0	
4406	11110115101110000000000010	3311	1		0			0	0	0	0	12
4412	11111117000100111131001010	2222	3	3	0		126419771777	0	0	0	0	
4414	11000107100100110100001010	1133	2		0			0	0	0	0	
4416	11000102100100000000001110	9999	2		0			0	0	0	0	
4418	11000102000110010000000010	2133	2		0		1277	0	0	0	0	
4422	00001000000010001000000000	9999	2		0		1277	0	0	0	0	
4424	1100010200010001090000011	3233	2		0		12772577	0	1	0	0	8
4430	11001102000110011300000010	2233	3		0		1765	0	0	0	0	
4432	11000105000110001311010100	3233	2		0		12731777	0	0	0	0	
4434	11001107000111111811010100	2133	2		0		127419731777	0	0	0	0	
4436	11001000000110000000000010	9999	2		0		1277	0	0	0	0	
4438	00000000000100000000000000	2133	2		155	1269		0	0	0	0	21
4452	11001100000110000000000010	2233	2		0		1276	0	0	0	0	21
4456	11001000000110000000000010	3233	9		0			0	0	0	0	

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 5 (Cont.)												
4458	11001002000010000900000010	2133	2		0			0	0	0	0	
4460	1000	3232	9					0	0	0	0	
4462	11001100000110000000000010	3332	0		157	1277		0	0	0	0	
4464	11000102010100000000001010	3311	1		0			0	0	0	0	
4466	11011100101010101111111111	3221	3	3	0		12701775	0	0	0	0	
4468	11001102000010000300000010	9999	2		0			0	0	0	0	
4550		9911	1		0			0	0	0	0	
4588	01001100000100000900000000	3233	2	1	0			0	0	0	0	
4606	11001102000110011310000010	3133	2		0		197717771277	0	0	0	0	21
4608	11001000000110011010000010	3233	2	1	0		197012681770	0	0	0	0	643912
4610	11001112000111000000000010	2233	2		0		12681474	0	0	0	0	8
4612	11001107000111010000000010	9999	2		0		14771277	0	0	1	0	12
4614	11011102001110111000001010	3332	1	2	0			0	0	0	0	12
4618	00010102000100000000000000	9999	3		0			0	0	0	0	
4620	00000102000000000000000000	2233	9		171			0	0	0	0	

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor **	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 5 (Cont.)												
4622	1101110000111011130001010	9999	3	12	0		12681777	0	0	0	0	219
4624	1100100000011011190000011	2133	2		156	1274	177625762177	0	0	0	0	21
4628	0110111000100000000000000	3322	1		0			0	0	0	0	
4630	1110111200111111000001010	2222	3	2	0		1271	0	0	0	0	12
9655	0100000200011000000000000	3233	9	1	0			0	0	0	0	
1392	0000	9999	9									
4324		9999	9									
4326		9999	9									
4402		9999	9									
4470		9999	9									
9657		9999	9									
Region 6												
1242	1000000000010000000000010	9999	2		171	1277		0	0	0	0	
1254	1101010200010000090000010	9999	3	1	0		1273	0	1	0	0	

Continued

Table 3 Continued

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 6 (Cont.)												
1276	11001102000100000000000010	9999	2		0			0	0	0	0	
1278	11000002000100000000000010	9999	2		0		1277	0	0	0	0	8
1280	10000000000100000900000010	9999	2		173	1277	1875	0	0	0	0	34
1282	11000102101100000000001010	9999	1		0			0	0	0	0	8
1352	11111112001010110000001110	9999	1	2	0			0	0	0	0	
1356	00000100000100000900000000	9999	2		0			0	1	0	0	
1358	11111112100110011000010 10	9999	3	2	0		1777	0	0	0	0	
1364	11100102100110000080000010	9999	1		0			0	0	0	0	
1368	11100102100110010800000010	9999	1		0		1277	0	0	0	0	
1380	11110112100000110000000010	9999	1		0			0	0	0	0	
1388	11001112100100000900001010	9999	3		0			0	0	0	0	
1396	01000000000001000000000000	3233	2		0		1277	0	0	0	0	
1404	11110102101110111000001010	3331	3	2	0		1775	0	0	0	0	
1412	11101100011011000900000010	9999	3	1	0			0	0	0	0	
1416	1 0010	9999	9									
1418	11010102001100011000000010	3232	3		0		12681776	0	0	0	0	

Continued

Table 3 Concluded

Midas No.	Fishes present	Fishery appraisals	Fishery type	Dams, fishways & screens	Reclamation	Stocking history after reclamation	General stocking history	Aquatic pesticide	H_2S odor	Siltation problem	Water level problem	Other
	1	2	3	4	5	6	7	8	9	10	11	12
Region 6 (Cont.)												
1424	0100110200010000090000000	3232	2		0		1277	0	0	0	0	
1426	0100110000010000030000000	3333	9		0		1275	0	0	0	0	
1428	1111111210111001000000010	3332	1		0			0	0	0	0	
1432	0001010210000000000000000	9999	1		0			0	0	0	0	
1434	1100000000011000010000010	2233	2		0		1277	0	0	0	0	
1436	1100010000010100000000010	3232	9		0			0	0	0	0	
1438	1100010200010000000000010	3233	2		0		1277	0	0	0	0	
1440	1100000000010100000000010	3232	2		0			0	0	0	0	
1354		9999	9									
1366		9999	9									
1370		9999	9									
1374		9999	9									
1410		9999	9									
1414		9999	9									
7433		9999	9									

CHAPTER 8

Appendix A. Vascular Plants Occurring (indicated by +) in Palustrine Habitats of Counties of the Characterization Area.[a]

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
EQUISETACEAE (Horsetail Family)											
Equisetum fluviatile L.	EM	+	+	+	+	+	+	+	+		+
E. palustre L.	EM			+				+	+		
LYCOPODIACEAE (Club-moss Family)											
Lycopodium inundatum L.	EM	+	+	+	+	+	+	+	+		+
v. *bigelovii* Tuckerm.	EM		+		+						+
ISOETACEAE (Quillwort Family)											
Isoetes macrospora Dur.	OW		+	+							
I. muricata Dur.	OW	+	+	+	+	+	+	+	+	+	+
I. riparia Engelm.	OW										
I. tuckermani A. Br.	OW		+	+						+	+
OPHIOGLOSSACEAE (Adder's-tongue Family)											
Botrychium lanceolatum (Geml.) Angstr.	FO										+
v. *angustisegmentum* Pease & Moore	FO					+	+	+	+		+
B. matricariaefolium A. Br.	FO	+	+	+	+	+	+	+	+		+
B. simplex E. Hitchc.	FO	+	+	+	+			+	+		
v. *tenebrosum* (A.A. Eat.) Clausen	FO	+	+	+		+		+			+
Ophioglossum vulgatum L.											
v. *pseudopodum* (Blake) Farw.	EM, FO	+	+	+	+		+	+	+	+	+
OSMUNDACEAE (Royal Fern Family)											
Osmunda cinnamomea L.	EM, FO, SS	+	+	+	+	+	+		+	+	+

[a] After Bean et al. 1966, Britton and Brown 1913, Cameron 1951, Eastman 1978, Fassett 1957, Hyland et al. 1977, Ogden 1948, personal communication from C. D. Richards, Dept. of Botany, University of Maine at Orono, Orono, ME; March 1979.

[b] EM=emergent wetland, FO=forested wetland, SS=scrub/shrub wetland, OW=open water.

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(Osmundaceae continued)											
O. claytoniana L.	EM	+	+	+	+	+	+		+		+
O. regalis L. v. spectabilis (Willd.) Gray	EM,FO,SS	+	+	+	+	+	+	+	+		+
POLYPODIACEAE (Fern Family)											
Athyrium Filix-femina (L.) Roth											
f. elegans (Gilbert) Clute	FO,SS	+	+	+				+			+
f. laurentianum (Butters) Fern.	EM,FO,SS	+	+	+		+					+
f. rubellum (Gilbert) Farw.	FO,SS	+	+	+	+	+	+	+	+	+	+
Dryopteris cristata (L.) Gray	FO,SS	+	+	+	+	+	+	+	+	+	+
v. clintoniana (D.C. Eat.) Underw.	FO							+			+
D. marginalis (L.) Gray											
f. elegans (J. Robins.) Gray	FO,SS	+	+					+			+
D. simulata Davenp.	FO,SS						+		+	+	+
D. spinulosa (O.F. Muell.) Watt	FO	+	+	+	+	+	+	+	+		+
D. thelypteris (L.) Gray v. pubescens (Lawson) Nakai (thelypteris palustris Schott)	EM,SS	+	+	+	+	+	+	+	+	+	+
Matteuccia pensylvanica (Willd.) Raymond (pteretis pensylvanica Willd.) Fern.)	FO,SS	+		+	+	+		+	+		+
Onoclea sensibilis L.	FO,SS	+	+	+	+	+	+	+	+	+	+
Woodwardia virginica (L.) Torr.	FO,SS	+	+	+	+	+		+	+		+
PINACEAE (Pine Family)											
Abies balsamea (L.) Mill.	FO,SS	+	+	+	+	+	+	+	+	+	+
Chamaecyparis thyoides (L.) BSP.	FO,SS				+	+					
Juniperus virginiana L. v. crebra Fern. & Grisc.	FO,SS					+	+	+	+	+	+
Larix laricina (DuRoi) K. Koch	FO,SS	+	+	+	+	+	+	+	+	+	+
Picea mariana (Mill.) BSP.	FO,SS	+	+	+	+	+	+	+	+		+
Pinus banksiana Lamb.	FO,SS	+	+	+							
P. strobus L.	FO,SS	+	+	+	+	+	+	+	+	+	+
Thuja occidentialis L.	FO,SS	+	+	+	+	+	+	+	+	+	+
Tsuga canadensis (L.) Carr.	FO	+	+	+	+	+	+	+	+	+	+
TYPHACEAE (Cattail Family)											
Thypha angustifolia L.	EM				+	+	+	+	+	+	+
T. glauca Godr.	EM										+
T. latifolia L.	EM	+	+	+	+	+	+		+	+	+
SPARGANIACEAE (Bur-reed Family)											
Sparganium americanum Nutt.	EM	+	+	+	+	+	+	+	+	+	+

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(Sparganiaceae continued)											
S. androcladum (Engelm.) Morong	EM	+	+	+	+	+	+	+	+	+	+
S. angustifolium Michx.	EM	+	+	+	+	+	+	+	+	+	+
S. chlorocarpum Rydb.	EM	+	+	+	+	+	+	+	+	+	+
v. acaule (Beeby) Fern.	EM	+	+	+	+	+	+	+	+	+	+
S. eurycarpum Engelm.	EM	+		+		+	+	+		+	+
S. fluctuans (Morong) Robins.	EM	+	+	+	+		+	+	+		+
S. multipedunculatum (Morong) Rydb.	EM	+					+				+
NAJADACEAE (Pondweed Family)											
Najas flexilis (Willd.) Rostk. & Schmidt	OW	+	+	+	+	+	+	+	+	+	+
N. gracillima (A. Br.) Magnus	OW				+	+		+			+
Potamogeton alpinus v. tenuifolius (Raf.) Ogden	OW	+		+				+			
P. amplifolius Tuckerm.	OW	+		+	+		+	+			+
P. berchtoldi Fieber	OW	+	+	+	+	+	+	+	+	+	+
v. acuminatus Fieber	OW	+	+	+	+	+		+	+	+	+
v. lacunatus (Hagstr.) Fern.	OW	+		+				+	+		+
v. polyphyllus (Morong) Fern.	OW			+	+			+		+	+
v. tenuissimus (Mert. & Koch) Fern.	OW			+	+		+	+	+		+
P. capillaceus Poir.	OW	+	+		+	+				+	+
P. confervoides Reinchenb.	OW					+					
P. epihydrus Raf. v. nuttallii (C. & S.) Fern.	OW	+	+	+	+	+	+	+	+	+	+
P. foliosus Raf. v. macellus Fern.	OW			+		+		+	+	+	
P. gemmiparus Robbins	OW			+			+				+
P. gramineus L.	OW	+	+	+	+	+		+	+		+
v. maximus Morong	OW	+	+		+	+			+	+	+
v. myriophyllus Robbins	OW							+	+		+
P. natans L.	OW	+	+	+	+	+	+	+	+		+
P. nodosus Poir.	OW			+		+		+	+	+	
P. oakesianus Robbins	OW	+	+	+		+	+		+		+
P. obtusifolius Mert. & Koch	OW	+		+		+		+			
P. pectinatus L.	OW		+						+		
P. perfoliatus L. v. bupleuroides (Fern.) Farw.	OW	+	+	+	+	+	+	+	+	+	+
P. praelongus Wulfen.	OW	+		+				+	+		
P. pulcher Tuckerm.	OW							+			
P. pusillus L.	OW	+	+	+				+	+		

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(Najadaceae continued)											
P. richardsonii (Ar. Benn.) Rydb.	OW			+				+	+		
P. robbinsii Oakes	OW	+	+	+	+		+	+	+	+	+
P. spirillus Tuckerm.	OW	+	+	+	+	+	+	+	+	+	+
P. vaseyi Robbins	OW			+				+	+		+
P. zosteriformis Fern.	OW	+		+	+		+	+			+
Zannichellia palustris L. v. major (Boenn.) W.D.J. Koch	OW		+			+				+	+
JUNCAGINACEAE (Arrowgrass Family)											
Scheuchzeria palustris L. v. americana Fern.	EM,SS	+	+	+	+	+		+	+		+
ALISMATACEAE (Water-plantain Family)											
Alisma subcordatum Raf.	OW	+	+	+	+		+	+	+	+	+
A. triviale Pursh	OW	+	+	+	+	+	+	+	+	+	+
Lophotocarpus spongiosus (Engelm.) J.G. Sm.	OW		+	+	+	+	+			+	
Sagittaria cuneata Sheldon	OW	+		+	+			+	+		
S. graminea Michx.	OW	+	+	+	+	+	+	+	+	+	+
S. latifolia Willd.	OW	+	+	+	+	+	+	+	+		+
v. obtusa (Muhl.) Wieg.	OW	+	+	+	+	+	+	+		+	+
S. rigida Pursh	OW									+	
HYDROCHARITACEAE (Frog's Bit Family)											
Elodea canadensis Michx.	OW			+	+	+	+	+	+	+	
E. nuttallii (Planch.) St. John	OW				+	+		+	+	+	
Vallisneria americana Michx.	OW	+		+	+			+	+	+	
GRAMINEAE (Grass Family)											
Agrostis alba L.	EM	+	+	+	+	+	+	+	+	+	+
v. palustris (Huds.) Pers.	EM	+	+	+	+	+	+		+	+	+
Alopecurus aequalis Sobol	EM	+		+				+			
A. geniculatus L.	EM	+		+		+	+				+
Calamgrostis canadensis (Michx.) Nutt.	EM	+	+	+	+	+	+	+	+	+	+
v. robusta Vasey	EM		+		+	+	+				+
C. inexpansa Gray v. novae-angliae Stebbins	EM,SS		+								
Echinochloa crusgalli (L.) Beauv.	EM	+	+	+	+	+	+	+	+		+
E. pungens (Poir.) Rydb.	EM			+						+	+
v. microstachya (Wieg.) Fern & Grisc.	EM									+	
v. wiegandii Fassett	EM										+
Elymus virginicus L.	EM	+	+	+	+	+	+	+	+	+	+

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(Gramineae continued)											
Eragrostis hypnoides (Lam.) BSP	EM			+							
E. pectinacea (Michx.) Ness	EM				+	+		+		+	+
Glyceria borealis (Nash) Batchelder	EM	+	+	+	+	+	+	+	+		+
G. canadensis (Michx.) Trin.	EM	+	+	+	+	+	+	+	+	+	+
G. fernaldii (Hitchc.) St. John	EM	+	+	+	+	+	+				+
G. grandis S. Wats.	EM	+	+	+	+	+	+	+	+	+	+
G. melicaria (Michx.) F.T. Hubbard	EM	+	+	+	+	+			+	+	+
G. obtusa (Muhl.) Trin.	EM		+	+		+	+				+
G. pallida (Torr.) Trin.	EM	+				+					+
G. striata (Lam.) Hitchc.	EM	+	+	+	+	+	+	+	+	+	+
Leersia oryzoides (L.) Sw.	EM	+	+	+	+	+	+	+	+	+	+
L. virginica Willd.	EM							+	+		
Phalaris arundinacea L.	EM	+	+	+	+	+	+	+	+	+	+
Phragmites communis Trin. v. berlandieri (Fourn.) Fern.	EM	+	+	+	+	+			+	+	+
P. palustris L.	EM	+	+	+	+	+	+	+	+		+
P. pratensis L.	EM	+	+	+	+	+	+	+	+	+	+
Spartina pectinata Link	EM	+	+	+	+	+	+	+	+	+	+
v. suttiei (Farw.) Fern.	EM		+				+			+	
Zizania aquatica L.	EM						+	+		+	+
v. angustifolia Hitchc.	EM	+		+	+		+	+	+	+	
CYPERACEAE (Sedge Family)											
Carex aquatilis Wahlenb. v. altior (Rydb.) Fern.	EM	+		+			+	+			
C. comosa Boott	EM	+		+				+	+	+	
C. crinita Lam.	EM	+	+	+	+	+	+		+	+	+
C. diandra Schrank	EM			+		+					
C. flava L.	EM	+	+	+	+	+	+	+	+		+
v. fertilis Peck	EM	+	+	+	+	+	+	+	+	+	+
C. hystricina Muhl.	EM	+	+	+				+		+	
C. lacustris Willd.	EM	+		+	+	+	+	+	+		+
C. laevivaginata (Kukenth.) Mackenz.	EM		+								
C. lanuginosa Michx.	EM			+				+			
C. lasiocarpa Ehrh. v. americana Fern.	EM	+	+	+	+	+	+	+	+		+
C. lenticularis Schwein.	EM	+	+	+			+	+	+		+
v. blakei Dew.	EM	+	+	+			+		+		+
C. limosa L.	EM	+	+	+		+			+		+
C. lurida Wahlenb.	EM	+	+	+	+	+	+	+	+	+	+
C. oligosperma Michx.	EM	+	+	+		+	+		+		+
C. prasina Wahlenb.	EM					+		+	+		+
C. pseudo-cyperus L.	EM	+	+	+	+	+		+		+	+

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(Gramineae continued)											
C. rostrata Stokes	EM	+	+	+	+	+	+	+	+	+	+
C. scabrata Schwein.	EM	+	+	+	+	+		+	+		+
C. stipata Muhl.	EM	+	+	+	+	+	+	+	+		+
C. stricta Lam.	EM	+	+	+	+	+	+	+		+	+
v. strictior (Dew.) Carey	EM		+	+			+	+		+	
C. torta Boott	EM			+	+			+			
C. trisperma Dew.	EM	+	+	+	+	+	+	+	+		+
v. billingsii Knight	EM	+	+	+	+	+		+	+		+
C. tuckermani Boott	EM	+		+	+	+		+	+		+
C. viridula Michx.	EM	+	+	+	+	+	+	+		+	+
C. vulpinoidea Michx.	EM		+	+		+		+	+		+
Cladium mariscoides (Muhl.) Torr.	EM	+	+	+	+	+	+	+	+	+	+
Cyperus dentatus Torr.	EM	+	+	+	+	+	+	+	+	+	+
C. diandrus Torr.	EM			+	+	+		+	+	+	+
C. esculentus L.	EM			+	+			+	+		+
C. filicinus Vahl.	EM									+	+
C. filiculmis Vahl v. macilentus Fern.	EM			+					+	+	+
C. rivularis Kunth	EM			+	+			+	+	+	+
C. strigosus L.	EM			+	+	+		+	+	+	
Dulichium arundinaceum (L.) Britt	EM	+	+	+	+	+	+	+	+	+	+
Eleocharis acicularis (L.) R.&S.	EM	+	+	+	+	+	+	+	+	+	+
v. submersa (Hj. Nilss.) Svenson	EM			+			+	+	+		
E. calva Torr.	EM			+							
E. diandra C. Wright	EM							+		+	+
E. elliptica Kunth	EM	+	+	+	+	+	+	+	+	+	+
E. intermedia (Muhl.) Schultes	EM			+							
E. obtusa (Willd.) Schultes	EM	+	+	+	+	+	+	+	+	+	+
v. jejuna Fern.	EM			+					+		
E. olivacea Torr.	EM		+				+	+	+	+	+
E. ovata (Roth) R.&S.	EM		+	+		+		+	+	+	
E. palustris (L.) R.&S.	EM	+		+			+				
v. major Sonder	EM	+	+	+	+	+	+		+		
E. parvula (R.&S.) Link	EM	+	+	+	+	+	+			+	+
E. robbinsii Oakes	EM		+	+	+	+				+	
E. rostellata Torr.	EM R									+	
E. smallii Britt.	EM	+	+	+	+	+	+	+	+	+	+
E. tenuis (Willd.) Schultes	EM	+	+	+	+	+	+	+			+
Eriophorum angustifolium Honckeny	SS	+	+	+	+	+		+			
v. majus Schultes	SS			+	+	+		+			+
E. gracile W.D.J. Koch	SS	+		+	+	+		+	+		+
E. spissum Fern.	SS	+	+	+	+	+		+	+		+
E. tenellum Nutt.	SS	+	+	+	+	+	+	+	+	+	+

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(*Gramineae* continued)											
E. virginicum L.	SS	+	+	+	+	+	+	+	+	+	+
E. viridi-carinatum (Engelm.) Fern.	SS	+	+	+	+	+		+	+		+
Rhynchospora alba (L.) Vahl	SS	+	+	+	+	+	+	+	+	+	+
R. capillacea Torr.	EM							+	+		
R. capitellata (Michx.) Vahl	SS	+	+	+			+	+	+	+	+
R. fusca (L.) Ait. f.	EM	+	+		+	+	+	+	+		+
Scirpus acutus Muhl.	EM	+	+	+	+	+	+	+		+	+
S. americanus Pers.	EM	+	+	+	+	+	+	+	+	+	+
S. atrocinctus Fern.	EM	+	+	+	+	+	+	+	+	+	+
S. atrovirens Willd.	EM			+	+	+	+	+			+
v. *georgianus* (Harper) Fern.	EM	+	+	+	+	+	+	+	+		+
S. cyperinus (L.) Kunth	EM	+	+	+	+	+	+	+	+	+	+
v. *pelius* Fern.	EM	+	+	+	+	+	+	+	+	+	+
S. expansus Fern.	EM					+			+		+
S. fluviatilis (Torr.) Gray	EM			+					+	+	
S. hudsonianus (Michx.) Fern.	EM	+	+	+		+		+	+		+
S. pedicellatus Fern.	EM	+	+		+	+	+	+	+	+	+
v. *pullus* Fern.	EM	+		+		+		+		+	
S. purshianus Fern.	EM							+	+		
S. robustus Pursh	EM										+
S. rubrotinctus Fern.	EM	+	+	+	+	+	+	+	+	+	+
S. smithii Gray	EM								+		+
S. steinmetzii Fern.	EM			+							
S. subterminalis Torr.	EM	+	+	+	+	+	+	+	+	+	+
S. torreyi Olney	EM	+		+	+	+	+	+	+	+	+
S. validus Vahl v. *creber* Fern.	EM	+	+	+	+	+	+	+	+	+	+
ARACEAE (Arum Family)											
Acorus calamus L.	OW	+	+	+	+	+	+	+	+	+	+
Arisaema atrorubens (Ait.) Blume	FO	+	+	+	+	+	+	+	+		+
A. stewardsonii Britt.	FO		+		+	+	+	+		+	+
Calla palustris L.	SS	+	+	+	+	+	+	+	+	+	+
Peltandra virginica (L.) Schott & Endl.	EM, OW								+		+
Symplocarpus foetidus (L.) Nutt.	EM,FO		+	+	+	+	+	+	+		+
LEMNACEAE (Duckweed Family)											
Lemna minor L.	OW			+	+	+			+		+
L. trisculca L.	OW			+		+					
Spirodela polyrhiza (L.) Schleid.	OW			+	+	+	+	+	+		+
XYRIDACEAE (Yellow-eyed Grass Family)											
Xyris caroliniana Walt.	EM,SS	+	+	+		+			+		

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(Xyridaceae continued)											
X. montana Ries	EM,SS		+		+	+	+		+		+
ERIOCAULACEAE (Pipewort Family)											
Eriocaulon septangulare With.	EM,OW	+	+	+	+	+	+	+	+	+	+
PONTEDERIACEAE (Pickerel-weed Family)											
Heteranthera dubia (Jacq.) MacM.	EM,OW			+	+						
Pontederia cordata L.	EM,OW	+	+	+	+	+	+	+	+	+	+
JUNCACEAE (Rush Family)											
Juncus acuminatus Michx.	EM	+	+	+	+	+	+	+		+	+
J. alpinus Vill.	EM										
v. rariflorus Hartm.	EM							+		+	
J. articulatus L.	EM	+	+	+	+	+	+	+	+	+	+
v. obtusatus Engelm.	EM		+	+		+		+	+	+	+
J. balticus Willd. v. littoralis Engelm.	EM	+	+		+	+	+		+	+	+
J. brachycephalus (Engelm.) Buchenau	EM			+				+			
J. brevicaudatus (Engelm.) Fern.	EM	+	+	+	+	+	+	+	+	+	+
J. bufonius L.	EM	+	+		+	+	+	+	+	+	+
v. halophilus Buchenau & Fern.	EM	+				+					
J. dudleyi Wieg.	EM			+		+		+			
J. effusus L. v. compactus Lej. & Court.	EM	+	+		+	+	+	+	+	+	+
v. decipiens Buchenau	EM	+	+		+	+	+				
v. costulatus Fern.	EM		+		+	+	+	+	+	+	+
v. pylaei (Laharpe) Fern. & Wieg.	EM	+	+	+	+	+	+	+	+	+	+
v. solutus Fern. & Wieg.	EM	+	+	+	+	+	+	+	+	+	+
J. filiformis L.	EM	+	+	+	+	+	+	+	+	+	+
J. marginatus Rostk.	EM	+		+		+	+				+
J. Militaris Bigel.	EM	+	+	+	+	+	+	+	+		+
J. nodosus L.	EM			+	+			+	+		
J. pelocarpus Mey.	EM	+	+	+	+	+	+	+	+	+	+
J. tenuis Willd.	EM	+	+	+	+	+	+	+	+	+	+
v. anthelatus Wieg.	EM	+	+	+	+	+		+	+		
v. williamsii Fern.	EM	+		+		+		+	+		+
LILIACEAE (Lily Family)											
Maianthemum canadense Desf.	FO	+	+	+	+	+	+	+	+	+	+
Smilacina trifolia (L.) Desf.	FO,SS	+	+	+	+	+		+	+		+
Veratrum viride L.	FO		+	+	+	+		+	+	+	+

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
IRIDACEAE (Iris Family)											
Iris pseudacorus L.	EM					+					
I. versicolor L.	EM	+	+	+	+	+	+	+	+	+	+
ORCHIDACEAE (Orchid Family)											
Arethusa bulbosa L.	SS		+	+	+	+		+	+		+
Calopogon pulchellus (Salisb.) R. Br.	EM,SS	+	+	+	+	+	+	+	+	+	+
Calypso bulbosa (L.) Oakes	FO,SS							+			
Corallorhiza trifida Chatelain v. verna (Nutt.) Fern.	SS	+	+	+	+	+	+	+	+		+
Habenaria blephariglottis (Willd.) Hook.	EM,SS			+	+			+	+		+
H. clavellata (Michx.) Spreng. v. ophioglossoides Fern.	SS	+	+	+	+	+	+	+	+	+	+
H. dilatata (Pursh) Hook.	EM,SS	+	+	+				+			+
H. fimbriata (Ait.) R. Br.	EM,FO	+	+	+	+	+	+	+	+		+
H. flava (L.) R. Br. v. herbiola (R. Br.) Ames & Correll	EM,FO,SS			+	+	+		+			+
H. hyperborea (L.) R. Br. v. huronensis (Nutt.) Farw.	FO,SS	+	+	+	+	+	+	+	+		+
H. lacera (Michx.) Lodd.	EM,SS		+	+	+	+	+	+	+	+	+
H. orbiculata (Pursh) Torr.	EM,FO,SS		+	+	+	+	+	+	+		+
H. psycodes (L.) Spreng.	EM,SS	+	+	+	+	+	+	+	+		+
Isotria verticillata (Willd.) Raf.	SS								+		
Liparis loeselii (L.) Richard	EM,SS	+	+	+	+	+	+	+	+	+	+
Listera auriculata Wieg.	SS		+	+							
L. convallarioides (Sw.) Nutt.	SS			+				+			
L. cordata (L.) R. Br.	SS	+	+	+				+			
Malaxis brachypoda (Gray) Fern.	FO,SS							+	+		
M. unifolia Michx.	FO,SS	+	+	+	+	+	+	+	+		+
Pogonia ophioglossoides (L.) Ker	SS	+	+	+	+	+	+	+	+	+	+
Spiranthes romanzoffiana Cham.	EM,SS	+	+	+	+	+	+	+	+		+
SALICACEAE (Willow Family)											
Populus grandidentata Michx.	FO	+	+	+	+	+	+	+	+	+	+
P. tremuloides Michx.	FO	+	+	+	+	+	+	+	+	+	+
Salix bebbiana Sarg.	FO,SS	+	+	+	+	+	+	+	+	+	+
v. capreifolia Fern.	FO,SS					+					
S. cordata Michx.	SS			+							
S. discolor Muh.	FO,SS	+	+	+	+	+	+	+	+	+	+
v. latifolia Anderss.	FO,SS	+		+	+	+		+			
v. overi C.R. Ball	FO,SS	+	+	+		+					
S. interior Rowlee	SS								+		

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(SALICACEAE continued)											
S. lucida Muh.	SS	+	+	+	+	+	+	+	+	+	+
v. angustifolia Anderss.	SS	+	+		+	+					
v. intonsa Fern.	SS	+		+	+	+					+
S. nigra Marsh.	FO		+	+	+	+	+	+	+	+	+
S. pedicellaris Pursh	SS			+							
v. hypoglauca Fern.	SS	+	+	+				+	+		+
v. tenuescens Fern.	SS			+							
S. pellita Anderss.	SS			+				+		+	
S. rigida Muhl.	SS	+	+	+	+	+	+	+	+	+	+
S. sericea Marsh.	SS	+	+	+	+	+		+	+	+	+
MYRICACEAE (Bayberry Family)											
Myrica gale L. v. subglabra (Chev.) Fern.	SS	+	+	+	+	+	+	+	+		+
BETULACEAE (Birch Family)											
Alnus crispa (Ait.) Pursh	SS	+	+								
v. mollis Fern.	SS	+	+	+	+	+	+	+	+	+	+
A. rugosa (DuRoi) Spreng.	SS	+	+	+	+	+	+	+	+	+	+
v. americana (Regel) Fern.	SS	+	+	+	+	+	+	+	+		+
A. Serrulata (Ait.) Willd.	SS	+	+	+	+	+	+	+	+	+	+
Betula lutea Michx. f.	FO	+	+	+	+	+	+	+	+	+	+
v. macrolepis Fern.	FO		+					+	+		+
B. papyrifera Marsh.	FO	+	+	+	+	+	+	+	+	+	+
v. commutata (Regel) Fern.	FO	+	+								
v. cordifolia (Regel) Fern.	FO	+	+	+	+	+				+	+
v. pensilis Fern.	FO	+	+	+							
B. populifolia Marsh.	SS,FO	+	+	+	+	+	+	+	+	+	+
Carpinus caroliniana Walt. v. virginiana (Marsh.) Fern	FO		+	+	+	+	+	+			+
FAGACEAE (Beech Family)											
Quercus bicolor Willd.	FO								+		
Q. macrocarpa Michx.	FO		+	+	+	+		+			
Q. rubra L.	FO	+	+	+	+	+	+	+	+	+	+
v. borealis (Michx. f.) Farw.	FO	+	+	+	+	+	+	+	+	+	+
ULMACEAE (Elm Family)											
Ulmus americana L. (f. laevior) Fern.	FO	+	+	+	+	+	+	+	+	+	+
URTICACEAE (Nettle Family)											
Boehmeria cylindrica (L.) Sw.	EM,FO		+	+	+	+	+	+	+		+
Laportea canadensis (L.) Wedd.	FO			+	+	+	+	+	+	+	+

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(Urticaceae continued)											
Pilea pumila (L.) Gray	FO			+	+	+		+	+	+	+
LORANTHACEAE (Mistletoe Family)											
Arceuthobium pusillum Peck	FO,SS	+	+	+	+	+	+	+		+	+
POLYGONACEAE (Buckwheat Family)											
Polygonum amphibium L. v. stipulaceum (Coleman) Fern.	EM,OW	+	+	+	+	+	+	+	+		+
P. careyi Olney	EM		+	+	+	+	+	+	+		+
P. coccineum Muh.	EM,OW	+		+	+	+	+	+	+	+	+
P. hydropiper L.	EM	+	+	+	+	+	+	+	+	+	+
P. hydropiperoides Michx.	EM, OW	+		+	+	+	+	+	+	+	+
P. lapathifolium L.	EM		+	+	+	+	+	+	+	+	+
v. salicifolium Sibth.	EM	+		+	+	+		+	+		
P. pensylvanicum L. v. laevigatum Fern.	EM			+	+	+		+	+	+	+
P. persicaria L.	EM,OW	+	+	+	+	+	+	+	+	+	+
P. punctatum Ell.	EM,OW					+					
v. leptostachyum (Meisn.) Small	EM,OW			+	+	+	+	+		+	+
v. parvum Vict. & Rousseau	EM,OW				+						
P. sagittatum L.	EM	+	+	+	+	+	+	+	+	+	+
P. scabrum Moench	EM	+	+	+	+	+	+	+	+		+
Rumex crispus L.	EM	+	+	+	+	+	+	+	+	+	+
R. obtusifolius L.	EM	+	+	+	+	+	+	+	+	+	+
R. orbiculatus Gray	EM	+	+	+	+	+		+	+	+	+
CERATOPHYLLACEAE (Hornwort Family)											
Ceratophyllum demersum L.	OW			+	+	+		+	+	+	+
C. echinatum Gray	OW			+					+		
NYMPHAEACEAE (Water Lily Family)											
Brasenia schreberi Gmel.	OW	+	+	+	+	+	+	+	+	+	+
Nymphaea odorata Ait.	OW	+	+	+	+	+	+	+	+	+	+
Nuphar advena (Ait.) Ait. f.	OW						+			+	
N. microphyllum (Pers.) Fern.	OW	+	+	+	+			+	+		+
N. variegatum Engelm.	OW	+	+	+	+	+	+	+	+	+	+
RANUNCULACEAE (Buttercup Family)											
Caltha palustris L.	EM			+				+	+	+	+
Coptis groenlandica (Oeder) Fern.	FO,SS	+	+	+	+	+	+	+	+	+	+
Ranunculus ambigens S. Wats.	EM		+								+
R. flabellaris Raf.	OW	+		+	+	+		+	+		

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(Ranunculaceae continued)											
R. gmelini DC. v. hookeri (D.Don) Benson	OW			+							
R. pensylvanicus L.f.	EM	+	+	+			+	+	+	+	+
R. repens L.	EM	+	+	+	+	+	+	+		+	+
v. glabratus DC.	EM			+				+			
v. linearilobus DC.	EM	+		+							
v. villosus Lamotte	EM	+	+	+		+			+		+
R. reptans L.	EM	+		+	+	+	+	+	+		
v. ovalis (Bigel.) T. & G.	EM	+	+	+	+	+	+	+	+	+	+
R. scelaratus L.	EM,OW										+
R. septentrionalis Poir.	EM,FO			+	+	+		+		+	+
R. trichophyllus Chaix	EM,OW	+	+	+	+	+		+			+
v. calvescens W.B. Drew	EM,OW	+		+	+	+		+	+		+
Thalictrum dioicum L.	FO			+	+	+		+			+
CRUCIFERAE (Mustard Family)											
Amoracia aquatica (Eat.) Wieg	EM,OW						+				
Cardamine pensylvanica Muhl.	EM	+	+	+	+	+	+	+	+	+	+
v. brittoniana Farw.	EM		+								
C. pratensis L.	EM					+		+			+
Nasturtium officinale R. Br.	OW										+
v. microphyllum (Boenn.) Thell.	OW							+			
Rorippa amphibia (L.) Bess.	EM								+		
R. islandica (Oeder) Borbas v. fernaldiana Butt. & Abbe	EM	+	+	+	+	+	+	+	+	+	+
v. hispida (Desv.) Butt. & Abbe	EM	+	+	+	+	+		+	+	+	+
R. sylvestris (L.) Bess.	EM	+	+	+	+	+				+	+
Subularia aquatica L.	EM,OW		+					+	+		+
SARRACENIACEAE (Pitcher-plant Family)											
Sarracenia purpurea L.	SS	+	+	+	+	+	+	+	+	+	+
DROSERACEAE (Sundew Family											
Drosera intermedia Hayne	SS	+	+	+	+	+	+	+	+	+	+
D. rotundifolia L.	SS	+	+	+	+	+	+	+	+	+	+
v. comosa Fern.	SS		+								
CRASSULACEAE (Stonecrop Family)											
Tillaea aquatica L.	EM			+			+			+	
SAXIFRAGACEAE (Saxifrage Family)											
Chrysosplenium americanum Schwein.	FO	+	+	+	+	+		+	+		+
Penthorum sedoides L.	EM			+	+	+	+	+		+	+
Ribes gladulosum Michx.	SS,FO	+	+	+	+	+	+	+	+	+	+

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(*Saxifragaceae* continued)											
R. lacustre (Pers.) Poir.	SS,FO	+	+	+		+		+	+		+
ROSACEAE (Rose Family)											
Amelanchier bartramiana (Tausch) Roemer	SS	+	+	+	+	+		+	+		+
Potentilla fruticosa L.	SS	+	+	+				+	+	+	
P. palustris (L.) Scop.	EM,SS	+	+	+	+	+	+	+	+	+	+
v. *villosa* (Pers) Lehm.	EM,SS	+	+			+	+	+			
Prunus serotina Ehrh.	FO	+	+	+	+	+	+	+	+	+	+
Pyrus americana (Marsh.) DC.	FO,SS	+	+	+	+	+	+	+	+	+	+
P. decora (Saeg.) Hyland	FO,SS	+	+	+	+	+					
P. floribunda Lindl.	SS	+	+	+	+	+	+	+	+	+	+
P. melanocarpa (Michx.) Willd.	SS	+	+	+	+	+	+	+	+	+	+
Rosa nitida Willd.	SS	+	+	+	+	+		+	+	+	+
Rubus chamaemorus L.	SS	+	+								
R. hispidus L.	SS	+	+	+	+	+	+	+	+	+	+
v. *obovalis* (Michx.) Fern.	SS	+	+	+	+	+	+	+	+	+	+
Spiraea latifolia (Ait.) Borkh.	SS	+	+	+	+	+	+	+	+	+	+
S. tomentosa L.	SS	+	+	+	+	+	+	+	+	+	+
CALLITRICHACEAE (Water Starwort Family)											
Callitriche anceps Fern.	EM,OW	+	+						+		
C. heterophylla Pursh	EM,OW			+	+			+	+		+
C. palustris L.	EM,OW	+	+	+	+	+	+	+	+	+	+
EMPETRACEAE (Crowberry Family)											
Empetrum nigrum L.	SS	+	+	+	+	+	+			+	+
ANACARDIACEAE (Cashew Family)											
Rhus vernix L.	FO.SS			+		+	+		+		+
AQUIFOLIACEAE (Holly Family)											
Ilex laevigata (Pursh) Gray	SS										+
I. verticillata (L.) Gray	SS	+	+	+	+	+	+	+	+	+	+
Nemopanthus mucronata (L.) Trel.	SS	+	+	+	+	+	+	+	+	+	+
ACERACEAE											
Acer pensylvanicum L.	FO	+	+	+	+	+	+	+	+	+	+
A. rubrum L.	FO,SS	+	+	+	+	+	+	+	+	+	+
v. *trilobum* K. Koch	FO.SS					+	+		+	+	
A. saccharinum L.	FO			+	+	+		+	+	+	+
v. *laciniatum* Pax.	FO	+	+	+	+	+	+	+	+	+	+

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
BALSAMINACEAE (Touch-me-not Family)											
Impatiens capensis Meerb.	EM	+	+	+	+	+	+	+	+	+	+
RHAMNACEAE (Buckthorn Family)											
Rhamnus alnifolia L'Her	SS	+	+	+	+	+		+	+		+
GUTTIFERAE (St. John's Wort Family)											
Hypericum boreale (Britt.) Bickn.	OW	+	+	+	+	+	+	+	+	+	+
H. canadense L.	EM	+	+	+	+	+	+	+	+	+	+
H. dissimulatum Bickn.	EM					+					+
H. ellipticum Hook.	EM	+	+	+	+	+	+	+	+	+	+
f. submersum Fassett	OW				+						
H. majus (Gray) Britt.	EM	+	+	+	+	+	+	+	+	+	+
H. mutilum L.	EM	+	+	+	+	+	+	+	+	+	+
v. parviflorum (Willd.) Fern.	EM	+	+	+	+		+	+	+	+	+
H. punctatum Lam.	EM			+	+			+	+		+
H. virginicum L.	EM	+	+	+	+	+		+	+	+	+
v. fraseri (Spath) Fern.	EM	+	+	+	+	+	+	+	+	+	+
ELATINACEAE (Waterwort Family)											
Elatine americana (Pursh) Arn.	EM,OW						+			+	+
E. minima (Nutt.) Fisch. & Mey	EM,OW	+	+	+	+	+	+	+		+	+
VIOLACEAE (Violet Family)											
Viola lanceolata L.	EM	+	+	+	+	+	+	+	+	+	+
LYTHRACEAE (Loosestrife Family)											
Decodon verticillatus (L.) Ell.	OW,SS		+	+	+	+	+	+	+		+
v. laevigatus T. & G.	OW,SS		+	+	+	+	+	+	+		
Lythrum alatum Pursh	EM			+				+			
L. salicaria L.	EM		+		+	+	+	+	+		+
v. gracilior Turcz	EM						+				
v. tomentosum (Mill.) DC.	EM			+	+	+		+		+	+
NYSSACEAE (Tupelo Family)											
Nyssa sylvatica Marsh.	FO,SS							+	+	+	+
MELASTOMATACEAE (Melastome Family)											
Rhexia virginica L.	EM		+	+		+	+		+		+
ONAGRACEAE (Evening Primrose Family)											
Epilobium coloratum Biehler	EM,FO,SS		+	+	+	+		+	+	+	+
E. glandulosum Lehm. v. adenocaulon (Haussk.) Fern.	EM,FO,SS	+	+	+	+	+	+	+	+	+	+
v. occidentale (Trel.) Fern	EM,FO,SS		+		+			+	+		

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(*ONAGRACEAE* continued)											
E. leptophyllum Raf.	EM	+	+	+	+	+	+	+	+	+	+
E. palustre L.	SS	+	+	+		+				+	
v. *grammadophyllum* Haussk.	SS										
v. *oliganthum* (Michx.) Fern.	SS	+	+	+	+	+		+			
Ludvigia palustris (L.) Ell.											
v. *americana* (DC.) Fern. & Grisc.	EM,OW	+	+	+	+	+	+	+	+	+	+
HALORAGACEAE (Water Milfoil Family)											
Myriophyllum alterniflorum DC.	OW	+		+	+	+		+	+		
M. exalbescens Fern.	OW	+			+					+	
M. farwellii Morong	OW	+	+	+			+	+			
M. humile (Raf.) Morong	EM								+	+	
f. *capillaceum* (Torr.) Fern.	OW			+	+			+			+
M. tenellum Bigel.	OW		+	+	+	+		+	+		
M. verticillatum L. v. *pectinatum* Wallr.	OW			+	+			+		+	+
Proserpinaca palustris L. v. *crebra* Fern. & Grisc.	EM,OW		+	+	+	+	+	+	+	+	+
P. pectinata Lam.	EM,OW		+						+		+
HIPPURIDACEAE (Mare's Tail Family)											
Hippuris vulgaris L.	EM,OW	+	+	+				+			+
UMBELLIFERAE (Parsley Family)											
Angelica atropurpurea L.	EM					+		+			+
Cicuta bulbifera L.	EM,OW	+	+	+	+	+	+	+	+	+	+
C. maculata L.	EM	+	+	+	+	+	+	+	+	+	+
Hydrocotyle americana L.	EM	+	+	+	+	+	+	+	+	+	+
Sium suave Walt.	EM,OW	+	+	+	+	+	+	+	+	+	+
CORNACEAE (Dogwood Family)											
Cornus amomum Mill.	SS	+	+	+	+	+	+	+	+	+	+
C. stolonifera Michx.	SS	+	+	+	+	+	+	+	+	+	+
CLETHRACEAE (White Alder Family)											
Clethra alnifolia L.	EM,FO										+
ERICACEAE (Heath Family)											
Andromeda glaucophylla Link	SS	+	+	+	+	+	+	+	+	+	+
Chamaedaphne calyculata (L.) Moench											
v. *angustifolia* (Ait.) Rehd.	SS	+	+	+	+	+	+	+	+	+	+
v. *latifolia* (Ait.) Fern.	SS	+		+							

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(ERICACEAE continued)											
Gaultheria hispidula (L.) Bigel.	SS	+	+	+	+	+	+	+	+		+
Gaylussacia baccata (Wang.) K. Koch	SS	+	+	+	+	+	+	+	+	+	+
G. dumosa (Andr.) T. & G.											
v. bigeloviana Fern.	SS	+	+	+	+	+	+			+	+
Kalmia angustifolia	SS	+	+	+	+	+	+	+	+	+	+
K. polifolia Wang.	SS	+	+	+	+	+		+	+		+
Ledum groenlandicum Oeder	SS	+	+	+	+	+	+	+	+	+	+
Lyonia ligustrina (L.) DC.	SS			+	+	+	+	+	+	+	+
v. salicifolia (Wats.) DC.	SS							+	+		
Rhododendron canadense (L.) Torr.	SS	+	+	+	+	+	+	+	+	+	+
Vaccinium angustifolium Ait.											
v. laevifolium House	SS	+	+	+	+	+	+	+	+	+	+
v. nigrum (Wood) Dole	SS	+	+	+	+	+	+	+	+	+	+
V. atrococcum (Gray) Heller	SS		+	+		+	+	+	+		+
V. corymbosum L.	SS	+	+	+	+	+	+	+	+	+	+
v. albiflorum (Hook.) Fern.	SS	+	+	+	+	+	+	+	+		+
v. glabrum Gray	SS		+	+	+	+	+				+
V. macrocarpon Ait.	SS	+	+	+	+	+	+	+	+	+	+
V. myrtilloides Michx.	SS	+	+	+	+	+	+	+	+	+	+
V. oxycoccus L.	SS	+	+	+	+	+	+	+	+	+	+
PRIMULACEAE (Primrose Family)											
Hottonia inflata Ell.	OW	+									
Lysimachia ciliata L.	EM			+	+	+	+	+	+	+	+
L. hybrida Michx.	EM	+		+			+	+	+	+	+
L. quadrifolia L.	EM	+	+	+	+	+	+	+	+	+	+
L. terrestris (L.) BSP.	EM	+	+	+	+	+	+	+	+	+	+
v. ovata (Rand & Redf.) Fern.	EM		+								
L. thyrsiflora L.	EM	+	+	+	+	+	+	+	+		+
Samolus parviflorus Raf.	EM			+	+					+	+
Trientalis borealis Raf.	SS	+	+	+	+	+	+	+	+	+	+
OLEACEA (Olive Family)											
Fraxinus americana L.	FO	+	+	+	+	+	+	+	+	+	+
F. nigra Marsh.	FO	+	+	+	+	+	+	+	+		+
F. pennsylvanica Marsh.	FO	+		+	+	+	+	+	+	+	+
v. austini Fern.	FO	+	+	+		+	+	+	+	+	+
v. subintegerrima (Vahl) Fern.	FO		+	+		+		+	+		
GENTIANACEAE (Gentian Family)											
Gentiana crinita Froel.	EM, FO					+	+	+	+	+	+
G. linearis Froel.	SS			+	+	+	+	+	+	+	+
Menyanthes trifoliata L. v. minor Raf.	EM, SS	+	+	+	+	+	+	+	+	+	+

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(*GENTIANACEAE* continued)											
Nymphoides cordata (Ell.) Fern.	OW	+	+	+	+	+	+	+	+	+	+
ASCLEPIADACEAE (Milkweed Family)											
Asclepias incarnata L.	EM			+				+	+	+	+
v. *pulchra* (Ehrh.) Pers.	EM	+		+	+	+	+	+	+	+	+
BORAGINACEAE (Borage Family)											
Myosotis laxa Lehm.	EM	+		+	+	+		+		+	
M. scorpioides L.	EM		+	+	+	+		+		+	+
LABIATAE (Mint Family)											
Lycopus americanus Muhl.	EM	+	+	+	+	+	+	+	+	+	+
L. uniflorus Michx.	EM	+	+	+	+	+	+	+	+	+	+
L. virginicus L.	EM							+	+	+	+
Mentha arvensis L.	EM	+	+	+		+	+	+	+	+	+
v. *villosa* (Benth.) S.R. Stewart	EM	+	+	+	+	+		+	+	+	+
M. cardiaca Baker	EM		+	+	+	+	+	+	+	+	+
M. piperita L.	EM	+		+		+		+	+		+
M. spicata L.	EM		+					+			+
Physostegia virginiana (L.) Benth.	EM		+	+					+		+
Scutellaria churchilliana Fern.	EM			+					+		+
S. epilobiifolia A. Hamilton	EM	+	+	+	+	+	+	+	+	+	+
S. lateriflora L.	EM	+	+	+	+	+	+	+	+	+	+
Stachys palustris L.	EM	+	+		+						
v. *homotricha* Fern.	EM	+			+						
v. *nipigonensis* Jennings	EM							+			+
SOLONACEAE (Nightshade Family)											
Solanum dulcamara L.	EM,FO,SS	+	+	+	+	+		+	+	+	+
SCROPHULARIACEAE (Figwort Family)											
Chelone glabra L.	EM	+	+	+	+	+	+	+	+	+	+
v. *dilatata* Fern. & Wieg.	EM	+	+								
Gratiola aurea Muhl.	EM			+	+	+		+	+	+	+
G. neglecta Torr.	EM			+	+			+			+
Lindernia dubia (L.) Pennell	EM	+	+	+	+	+		+	+	+	+
v. *inundata* Pennell	EM			+					+		
v. *riparia* (Raf.) Fern.	EM	+			+					+	+
Mimulus ringens L.	EM	+	+	+	+	+	+	+	+	+	+
v. *colpophilus* Fern.	EM	+		+	+					+	
Veronica americana (Raf.) Schwein.	EM		+	+	+	+		+	+		+
V. scutellata L.	EM	+	+	+	+	+	+	+	+	+	+

(Continued)

Appendix A. (Continued)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
LENTIBULARIACEAE (Bladderwort Family)											
Utricularia cornuta Michx.	EM	+	+	+	+	+	+	+	+	+	+
U. geminiscapa Benj.	OW	+	+		+	+			+		+
U. gibba L.	OW		+	+		+	+	+	+		
U. inflata Walt. v. *minor* Chapm.	OW	+	+	+	+		+	+	+		+
U. intermedia Hayne	OW	+	+	+	+	+	+	+	+		+
U. minor L.	OW,SS		+	+	+			+	+	+	+
U. purpurea Walt.	OW		+	+	+			+	+		+
U. resupinata B.D. Greene	EM		+					+	+		
U. vulgaris L.	OW	+	+	+	+	+	+	+	+	+	+
RUBIACEAE (Madder Family)											
Cephalanthus occidentalis L.	SS	+	+	+	+	+	+	+	+	+	+
Galium palustre L.	EM	+	+	+	+	+	+	+	+	+	+
G. tinctorium L.	EM	+	+	+	+	+	+	+	+	+	+
v. *subbiflorum* (Wieg.) Fern.	EM		+				+		+		
G. trifidum L.	EM	+	+	+	+	+			+	+	+
v. *halophilum* Fern. & Wieg.	EM	+	+			+					
G. triflorum Michx.	FO	+	+	+	+	+	+	+	+	+	+
v. *asprelliforme* Fern.	FO							+			
CAPRIFOLIACEAE (Honeysuckle Family)											
Lonicera oblongifolia (Goldie) Hook.	SS			+							
L. villosa (Michx.) R. & S.	SS	+		+				+			
v. *calvescens* (Fern. & Wieg.) Fern.	SS	+				+			+		
v. *solonis* (Eat.) Fern.	SS	+	+	+	+	+		+	+		+
v. *tonsa* Fern.	SS	+	+	+	+	+					
Sambucus canadensis L.	SS	+	+	+	+	+	+		+	+	+
S. pubens Michx.	SS	+	+	+	+	+	+	+	+	+	+
Viburnum cassinoides L.	SS	+	+	+	+	+	+	+	+	+	+
V. recognitum Fern.	SS	+	+	+	+	+	+	+	+	+	+
CAMPANULACEAE (Bluebell Family)											
Campanula aparinoides Pursh	EM,OW		+	+	+			+	+		+
C. uliginosa Rydb.	EM	+	+	+	+	+		+	+		+
Lobelia cardinalis L.	EM	+	+	+	+	+	+	+	+	+	
L. dortmanna L.	OW	+	+	+	+	+	+	+	+	+	+
L. kalmii L.	EM			+				+		+	
L. siphilitica L.	EM									+	+
COMPOSITAE (Composite Family)											
Aster junciformis Rydb.	EM	+		+		+		+	+		
A. lateriflorus (L.) Britt.	EM	+	+	+	+	+	+	+	+	+	+

(Continued)

Appendix A. (Concluded)

Scientific name	Habitat	Washington	Hancock	Penobscot	Waldo	Knox	Lincoln	Kennebec	Androscoggin	Sagadahoc	Cumberland
(COMPOSITAE continued)											
v. pendulus (Ait.) Burgess	EM			+	+					+	
v. tenuipes Wieg.	EM							+	+		
A. nemoralis Ait.	SS	+	+	+	+	+	+	+	+	+	+
A. praealtus Poir. v. angustior Wieg.	EM		+								
A. puniceus L.	EM	+	+	+	+	+	+	+	+	+	+
A. simplex Willd.	EM		+	+		+			+	+	+
v. ramosissimus (T. & G.) Cronq.	EM	+	+	+	+	+	+	+	+	+	+
A. tradescanti L.	EM	+	+	+	+	+	+	+	+		+
Bidens cernua L.	EM	+	+	+	+	+	+	+	+	+	+
v. elliptica Wieg.	EM		+	+		+	+	+	+		+
v. minima (Huds.) Pursh	EM		+						+		+
B. comosa (Gray) Wieg.	EM			+							+
B. connata Muh.	EM	+				+				+	
v. petiolata (Nutt.) Farw.	EM	+	+	+	+	+	+	+	+	+	+
B. discoidea (T. & G.) Britt.	EM,SS		+					+			
B. frondosa L.	EM	+	+	+	+	+	+	+	+	+	+
B. vulgata Greene	EM		+	+	+	+		+	+		+
Cirsium muticum Michx.	EM	+	+	+		+	+	+	+		+
Eupatorium maculatum L.	EM	+	+	+	+	+	+	+	+	+	
v. foliosum (Fern.) Wieg.	EM		+		+						+
E. perfoliatum L.	EM	+	+	+	+	+	+	+	+	+	+
v. colpophilum Fern. & Grisc.	EM									+	
Megalodonta beckii (Torr.) Greene	OW	+		+	+	+		+	+		
Senecio robbinsii Oakes	EM	+	+	+	+	+	+	+	+		+
Solidago graminifolia (L.) Salisb.	EM		+			+		+		+	
v. nuttallii (Greene) Fern.	EM	+	+	+	+	+	+	+	+	+	+
S. uliginosa Nutt	EM,SS	+	+	+	+	+	+	+	+		+
v. linoides (T. & G.) Fern.	EM,SS	+	+	+	+	+	+	+	+		+
v. terrae-novae (T. & G.) Fern.	EM,SS	+	+		+	+			+		+
Tussilago farfara L.	EM	+	+	+	+	+	+		+	+	+

Appendix B. Invertebrates Likely to Occur in Open Water Palustrine Habitats of the Characterization Area [a] and Their Principal Feeding Habitats [b]

Order and species	Feeding habits
ANNELIDA	
HIRUDINEA (leeches)	
Erpobdellidae	
Erpobdella punctata	C,P
Glossiphoniidae	
Placobdella ornaga	C,S
Hirudidae	
Macrobdella decora	C,P
ARTHROPODA	
ARACHNIDA	
Prostigmata (e.g., water mites)	
Unidentified spp.	C,P
CRUSTACEA	
Amphipoda (scuds, sideswimmers)	
Talitridae	
Hyalella azteca	O,S
Isopoda (aquatic sowbugs)	
Asellidae	
Asellus sp.	O,S

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[a] Palustrine invertebrate populations in the characterization area have not comprehensively been studied. The data in this table (Reinecke 1977) is based on collections made from beaver ponds in central (noncoastal) Maine. At the time this appendix was being prepared, D. M. Cameron Jr. (York University, Toronto, Canada) was compiling a checklist of insects occurring in a scrub/shrub peat bog in central Maine. It is scheduled for publication in 1980. The insect species occurring in emergent wetland and forested wetland are predominantly those which also occur in the upland terrestrial environment (*personal communication* from J. B. Diamond, Department of Entomology, University of Maine, Orono, ME, March 1979).

[b] Cummins 1973 and Pennak 1953. Many of these invertebrates go through a series of instars or larval stages, and their feeding strategies may change in the process. Unless otherwise noted, these designations are characteristic of the adult organism. C = carnivore; D = detritivore; H = herbivore; O = omnivore , P = parasite, and S = scavenger.

Continued

Appendix B. Continued

Order and species	Feeding habits
INSECTA	
Coleoptera (beetles)	
Chrysomelidae (leaf beetles)	
Donacia sp.	H
Dytiscidae (predaceous diving beetles)	C
Acilius semisulcatus	
Agabus seriatus	
Bidessus affinis	
Coptotomus interrogatus	
Hydroporus sp.	
Hydrotus sp.	
Laccophilus sp.	
Rhantus binotatus	
Rhantus bistriatus	
Haliplidae larvae and adults (crawling water beetles)	H
Peltodvtes sp.	
Haliplus	
connexus	
immaculicollis	
Gyrinidae adults (whirligig beatles)	C
Dineutus nigrior	
Gyrinus sp.	
Helodidae larvae (marsh beetles)	H
Unidentified spp.	
Hydrophilidae (water scavenger beetles)	
larvae	C
adults	D
Berosus striatus	
Enochrus sp.	
Hydrobius sp.	
Hydrochara sp.	
Tropisternus mixtus	
Diptera (flies)	
Ceratopogonidae larvae (biting midges)	C,D,H
Bezzia sp.	
Atrichopogon sp.	
Chaoboridae (phantom midges)	
Chaoborus sp.	
Chironomidae larvae (midges)	C,D,H
Chrionominae	
Chironomus sp.	

Continued

Appendix B. Continued

Order and species	Feeding habits
INSECTA (Continued)	
Diptera (flies) (Continued)	
Chrionominae (Continued)	C,D,H
Cryptochironomus fulvus	
Dicrotendipes sp.	
Endochironomus nigricans	
Glyptotendipes lobiferus	
Harnischia sp.	
Kiefferulus dux	
Microtendipes sp.	
Omisus pica	
Parachironomus sp.	
Phaenopsectra sp.	
Polypedilum fallax	
Polypedilum halterale	
Polypedilum illinoense	
Pseudochironomus sp.	
Tanytarsus sp.	
Tribelos quadripunctatus	
Orthocladinae	
Acricotopus sp.	
Corynoneura sp.	
Cricotopus sp.	
Microcricotopus sp.	
Parametriocnemus sp.	
Psectrocladius sp.	
Tanypodinae	
Ablabesmyia sp.	
Clinotanypus sp.	
Larsia sp.	
Macropelopia sp.	
Nilotanypus sp.	
Procladius sp.	
Psectrotanypus sp.	
Culicidae (mosquitoes)	D,H
Anopheles sp.	
Dixidae (dixid midges)	D,H
Dixa spp.	
Tabanidae larvae (horseflies)	D,S
Chrysops sp.	D,S
Tipulidae (craneflies)	D
Helius sp.	
Prionocera sp.	

Continued

Appendix B. Continued

Order and species	Feeding habits
INSECTA (Continued)	
Diptera (continued)	
Sciomyzidae larvae (marsh flies)	
Sepedon sp.	
Stratiomyiidae larvae (soldier flies)	C,D,H
Odontomyia sp.	
Syrphidae larvae (flower flies)	
Tubifera sp.	
Ephemeroptera larvae (mayflies)	D,H
Baetidae	
Caenis sp.	
Callibaetis ferrugineus	
Leptophlebia cupida	
Siphlonurus sp.	
Heptageniidae	
Arthroplea bipunctata	
Hemiptera (true bugs)	
Belostomatidae (giant water bugs)	C
Belostoma sp.	
Lethocerus americanus	
Corixidae (water boatmen)	D,H
Callicorixa sp.	
Cenocorixa sp.	
Hesperocorixa sp.	
Palmacorixa sp.	
Sigara sp.	
Gerridae (water striders)	C
Gerris sp.	
Hebridae (velvet water bugs)	C
Hebrus sp.	
Hydrometridae (marsh treaders)	C
Hydrometra sp.	
Mesoveliidae (water treaders)	C,O
Mesovelia sp.	
Nepidae (water scorpions)	C
Nepa apiculata	
Ranatra sp.	
Notonectidae (backswimmers)	C
Buenoa sp.	
Notonecta sp.	
Veliidae (broad-shouldered water striders)	C
Microvelia sp.	

Continued

Appendix B. Continued

Order and species	Feeding habits
INSECTA (Continued)	
Lepidoptera larvae (butterflies and moths)	H
Pyralididae (aquatic caterpillars)	
Parapoynx obscuralis	
Neuroptera (various flying insects)	
Corydalidae (alderflies)	C
Chauliodes pectinicornis	
Sisyridae (spongilla flies)	C
Climacia areolaris	
Odonata (dragonflies, damselflies)	C
Aeschnidae	C
Aeschna	
canadensis	
interrupta	
umbrosa	
Coenagrionidae	C
Coenagrion resolutum	
Enallagma	
ebrium	
vernale	
Ischnura verticalis	
Lestes rectangularis	
Nehallenia gracilis	
Libellulidae	
Leucorrhinia intacta	C
Tetragoneuria caenis	
Trichoptera larvae (caddis flies)	
Leptoceridae	H
Oecetis sp.	
Limnephilidae	D,S
Limnephilus sp.	
Nemotaulius hostilis	
Platycentropus radiatus	
Phryganeidae	H
Banksiola sp.	
Psychomyiidae	D,H
Polycentropus sp.	

Continued

Appendix B. Concluded

Order and species	Feeding habits
MOLLUSCA	
GASTEROPODA	
Ancylidae (limpets)	
Ferrissia sp.	
Hydrobiidae (snails)	
Amnicola sp.	
Lymnaeidae (pond snails)	
Lymnaea sp.	O,S
Physidae (pouch snails)	
Physa sp.	O,S
Planorbidae (orb snails)	
Helisoma sp.	
Gyraulus sp.	
PELECYPODA	
Sphaeriidae (fingernail clams)	D
Pisidium sp.	
Musculium sp.	

Appendix C. Vertebrates Likely to Occur, Breed, or Rear Young in Palustrine Habitats of the Characterization Area

Common name	Habitat [a]	Feeding habits [b]	Breeding status [c]
Mammals [d]			
Bat, little brown	OW	I	
Bat, red	OW	I	
Bat, silver-haired	OW	I	
Beaver	EM,FO,SS,OW	H	B
Black bear	EM,FO,SS	O	
Deer	EM,FO,SS,OW	H	
Eastern pipistrelle (bat)	OW	I	
Keen's myotis (bat)	OW	I	
Mink	EM,FO,SS,OW	C	
Mole, star-nosed	EM,SS	I	
Moose	EM,FO,SS,OW	H	
Mouse, meadow jumping	EM	O	
Muskrat	EM,FO,SS,OW	H	B
Opossum, virginia	EM,FO	O	
Raccoon	EM,FO,SS,OW	O	
Shrew, masked	FO,SS	I	
Shrew, smokey	FO,SS	I	
Shrew, water	EM,FO,SS,OW	H	B
Vole, meadow	EM	H	
Birds [e]			
Loon, common	OW	C	B
Grebe, pied-billed	OW	C,I	B
Cormorant, double-crested	OW	C,I	
Heron, great blue	EM	C,I	
green	EM	C,I	B
black-crowned night	EM	C,I	B

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[a] EM = emergent wetland, FO = forested wetland, SS = scrub/shrub wetland, and OW = open water.

[b] C = carnivore (vertebrate eater), D = detritivore, H = herbivore, I = invertebrate eater, and O = omnivore.

[c] B = species which breed and/or rear young in palustrine areas. See the chapters on the various vertebrate groups for more detailed comments.

[d] personal communication from C. R. Ferris, School of Forest Resources, University of Maine, Orono, ME. May 1979.

[e] personal communication from N. C. Famous, School of Forest Resources, University of Maine, Orono, ME. June 1979.

[f] C-I denotes species whose feeding habits are primarily invertebrate as juveniles and primarily carnivorous as adults. (C)I denotes species which are primarily invertebrate feeders; large adults, however, may prey on fish occasionally.

(Continued)

Appendix C. Continued

Common name	Habitat [a]	Feeding habits [b]	Breeding status [c]
Birds (cont.)			
Bittern, least	EM	I	B
american	EM	C,I	B
Goose, canada	EM,OW	O	B
Mallard	EM,OW	O	B
Duck, black	EM,OW	O	B
ruddy	OW	O	
Teal, green-winged	EM,OW	O	B
blue-winged	EM,OW	O	B
Duck, wood	FO,OW	O	B
ring-necked	FO,OW,EM,SS	O	B
Goldeneye, common	FO,OW	O	B
bairds	OW	O	
Merganser, hooded	FO,OW	C	B
common	EM,OW	C	B
Hawk, sharp-shinned	FO,OW	C	B
broad-winged	FO	C	B
marsh	EM,SS	C	B
rough-legged	SS	C	
Eagle, bald	OW	C	
Osprey	OW	C	
Kestrel, american	SS	C,I	B
Grouse, spruce	SS,FO	O	B
Rail, virginia	EM	I	B
Sora	OW	I	B
Gallinule, common	EM	I	B
Coot, american	EM	I	B
Woodcock, american	FO	I	B
Snipe, common	EM,SS	I	B
Sandpiper, least	EM,OW	I	
pectoral	EM,OW	I	
solitary	EM,OW	I	
spotted	EM,OW	I	
Yellow-legs, greater	EM,OW	I	
lesser	EM,OW	I	
Gull, bonaparte's	OW	C,I	
great black-backed	OW	O	
herring	OW	O	
Tern, black	OW	I	
common	OW	C	
Kingfisher, belted	OW	C	
Sapsucker, yellow-bellied	FO	I	B

(Continued)

Appendix C. Continued

Common name	Habitat [a]	Feeding habits [b]	Breeding status [c]
Birds (Cont.)			
Woodpecker, pileated	FO	I	B
hairy	FO	I	B
downy	FO	I	B
black-backed 3-toed	FO	I	B
northern 3-toed	FO	I	B
Kingbird, eastern	SS	I	B
Flycatcher, alder	SS	I	B
yellow-bellied	FO,SS	I	B
least	FO	I	B
Pewee, eastern wood	FO	I	B
Flycatcher, olive-sided	FO	I	B
Swallow, tree	SS,FO	I	B
bank	OW	I	
rough-winged	OW	I	
barn	OW	I	
cliff	OW	I	
Martin, purple	OW	I	
Jay, grey	FO	O	B
Raven, common	EM,FO,SS	O	
Crow, common	EM,FO,SS	O	
Chickadee, boreal	FO	I	B
black-capped	FO	I	B
Nuthatch, red-breasted	FO	I	B
Creeper, brown	FO	I	B
Wren, winter	FO	I	B
long-billed marsh	EM,SS	I	B
short-billed marsh	EM,SS	I	B
Catbird, grey	SS	I	B
Robin, american	FO,SS	O	B
Thrush, wood	FO	I	B
hermit	FO	I	B
swainson's	FO	I	B
Veery	FO	I	B
Kinglet, ruby-crowned	FO,SS	I	B
golden-crowned	FO	I	B
Water pipit	SS	I	B
Waxwing, cedar	SS	O	B
Shrike, northern	SS	C	
Starling	SS	I	B

(Continued)

Appendix C. Continued

Common name	Habitat [a]	Feeding habits [b]	Breeding status [c]
Birds (Cont.)			
Vireo, solitary	FO	I	B
red-eyed	FO	I	B
warbling	FO	I	B
Warbler, black-and-white	FO	I	B
tennessee	FO,SS	I	B
nashville	FO	I	B
parula	FO	I	B
yellow	FO	I	B
magnolia	FO	I	B
cape may	FO	I	B
black-throated blue	FO	I	B
yellow-rumped	FO	I	B
black-throated green	FO	I	B
blackburnian	FO	I	B
bay-breasted	FO	I	B
canada	FO	I	B
chestnut-sided	FO,SS	I	B
palm	SS	I	B
wilson's	SS	I	B
Ovenbird	FO	I	B
Waterthrush, northern	FO	I	B
Yellowthroat, common	EM,SS	I	B
Redstart, american	FO	I	B
Bobolink	EM,SS	I	B
Blackbird, red-winged	EM,SS	O	B
Oriole, northern	FO	I	B
Blackbird, rusty	SS	O	B
Grackle, common	SS	O	B
Cowbird, brown-headed	SS	O	B
Grosbeak, rose-breasted	FO	I	B
Finch, purple	FO	I	B
Siskin, pine	FO	O	B
Goldfinch, american	SS	O	B
Sparrow, savannah	SS	O	B
Junco, dark-eyed	SS	O	B
Sparrow, chipping	SS	O	B
white-throated	SS	O	B
lincoln's	SS	O	B
swamp	SS	O	B
song	SS	O	B

(Continued)

Appendix C. Continued

Common name	Habitat [a]	Feeding habits [b]		Breeding status [c]
Reptiles				
Snake, eastern garter	FO,SS		C,I	
northern brown	Insufficient data		C,I	
northern water	EM,FO,OW		C,I	B
red-bellied	Insufficient data		C,I	
Turtle, eastern painted	OW		O	B
snapping	EM,FO,OW		O	B
wood	EM,FO,OW		O	B
Amphibians				
Bullfrog	OW	larvae	D	
		adults	C,I	B
Frog, gray tree	FO,OW	larvae	D	
		adults	I	B
green	EM,FO,SS,OW	larvae,	D	
		adults	I	B
mink	EM,FO,SS,OW	larvae	D	
		adults	I	B
northern leopard	EM,FO,SS,OW	larvae	D	
		adults	I	B
pickerel	EM,FO,SS,OW	larvae	D	
		adults	I	B
wood	FO,OW	larvae	D	
		adults	I	B
Newt, red-spotted	OW		I	B
Salamander, blue-spotted	OW		I	B
four-toed	FO,SS		I	B
red-backed	FO		I	B
Spring peeper	FO,OW	larvae	D	
		adults	I	B
Toad, american	OW	larvae	D	
		adults	I	B
Fish				
Bass, largemouth	OW		C-I[f]	B
smallmouth	OW		C-I	B
Bullhead, brown	EM,OW		O	B
Carp	OW		O	B
Dace, finescale	OW (bogs)		I	B
northern redbelly	OW (bogs)		H	B

(Continued)

Appendix C. Concluded

Common name	Habitat [a]	Feeding habits [b]	Breeding status [c]
Fish (Cont.)			
Darter, swamp	OW	I	B
Eel, american	OW	C-I	B
Perch, white	OW	C-I	B
yellow	OW	C-I	B
Pickerel, chain	OW	C	B
Shiner, blacknose	OW	O	B
bridle	OW	O	B
golden	OW	O	B
Stickleback, fourspine	EM,OW	I	B
ninespine	EM,OW	I	B
threespine	EM,OW	I	B
Sucker, white	OW	O	
Sunfish, pumpkinseed	OW	(C)I	B
Trout, brook	OW	(C)I	

CHAPTER 11

Table 1. List of Fishes Captured by Trawl in Boothbay Region of Maine.[a]

Species		Species	
Atlantic hagfish		Radiated shanny	
Spiny dogfish		Rock gunnel	
Little skate	c	Longhorn sculpin	c
Barndoor skate	c	Shorthorn sculpin	c
American eel	c	Sea raven	c
Blueback herring		Mailed sculpin	
Alewife		Alligator fish	
Atlantic menhaden		Lumpfish	
Atlantic herring	c	Windowpane	
Rainbow smelt		Winter flounder	c
Goosefish		American plaice	c
Silver hake	c	Yellowtail flounder	
Atlantic tomcod		Smooth flounder	
Pollock		Witch flounder	c
Atlantic cod	c		
Haddock			
Red hake	c		
White hake	c		
Fourbeard rockling			
Ocean pout			
Threespine stickleback			
Northern pipefish			
Cunner	c		
Redfish	c		
Snakeblenny			

[a] USFWS (*unpublished*)

[c] Found also by Chenoweth (*unpublished*)

Table 2. Fish Species Captured in Montsweag Bay and the Sheepscot River From June 1970 through 1977.[a]

Taxon	Occurrence	
	MB	Sheepscot
Lampreys - Petromyzontidae		
Sea lamprey, *Petromyzon marinus* Linnaeus	x	
Dogfish sharks - Squalidae		
Spiny dogfish, *Squalus acanthias* Linnaeus		x
Skates - Rajidae		
Little skate, *Raja erinacea* Mitchill	x	x
Winter skate, *Raja ocellata* Mitchill	x	x
Thorny skate, *Raja radiata* Donovan		x
Sturgeons - Acipenseridae		
Shortnose sturgeon, *Acipenser brevirostrum* Lesueur	x	x
Atlantic sturgeon, *Acipenser oxyrhynchus* Mitchill	x	
Freshwater eels - Anguillidae		
American eel, *Anguilla rostrata* (Lesueur)	x	
Herrings - Clupeidae		
Blueback herring, *Alosa aestivalis* (Mitchill)	x	x
Hickory shad, *Alosa mediocris* (Mitchill)	x	
Alewife, *Alosa pseudoharengus* (Wilson)	x	x
American shad, *Alosa sapidissima* (Wilson)	x	x
Atlantic menhaden, *Brevoortia tyrannus* (Latrobe)	x	x
Atlantic herring, *Clupea harengus harengus* Linnaeus	x	x
Anchovies - Engraulidae		
Striped anchovy, *Anchoa hepsetus* (Linnaeus)	x	
Trouts - Salmonidae		
Coho salmon, *Oncorhynchus kisutch* (Walbaum)		
Atlantic salmon, *Salmo salar* Linnaeus	x	
Smelts - Osmeridae		
Capelin, *Mallotus villosus* (Müller)	x	
Rainbow smelt, *Osmerus mordax* (Mitchill)	x	x
Goosefishes - Lophiidae		
Goosefish, *Lophius americanus* Valenciennes		x
Codfishes - Gadidae		
Atlantic cod, *Gadus morhua* Linnaeus	x	x
Silver hake, *Merluccius bilinearis* (Mitchill)	x	x

(Continued)

[a] Maine Yankee Atomic Power Co. 1978.

Table 2. (Continued)

Taxon	Occurrence MB	Occurrence Sheepscot
Codfishes - Gadidae		
Atlantic tomcod, *Microgadus tomcod* (Walbaum)	x	x
Pollock, *Pollachius virens* (Linnaeus)	x	x
Red hake, *Urophycis chuss* (Walbaum)	x	x
White hake, *Urophycis tenuis* (Mitchill)	x	x
Eelpouts - Zoarcidae		
Ocean pout, *Macrozoarces americanus* (Bloch and Schneider)	x	x
Killifishes - Cyprinodontidae		
Mummichog, *Fundulus heteroclitus* (Linnaeus)	x	
Silversides - Atherinidae		
Atlantic silverside, *Menidia menidia* (Linnaeus)	x	x
Sticklebacks - Gasterosteidae		
Fourspine stickleback, *Apeltes quadracus* (Mitchill)	x	
Threespine stickleback, *Gasterosteus aculeatus* Linnaeus	x	
Blackspotted stickleback, *Gasterosteus wheatlandi* Putnam	x	
Ninespine stickleback, *Pungitius pungitius* (Linnaeus)	x	
Pipefishes - Syngnathidae		
Northern pipefish, *Syngnathus fuscus* Storer	x	x
Temperate basses - Percichthyidae		
White perch, *Morone americana* (Gmelin)	x	x
Striped bass, *Morone saxatilis* (Walbaum)	x	x
Perches - Percidae		
Yellow perch, *Perca flavescens* (Mitchill)		
Bluefishes - Pomatomidae		
Bluefish, *Pomatomus saltatrix* (Linnaeus)	x	x
Jacks - Carangidae		
Crevalle jack, *Caranx hippos* (Linnaeus)	x	
Porgies - Sparidae		
Scup, *Stenotomus chrysops* (Linnaeus)	x	
Wrasses - Labridae		
Cunner, *Tautogolabrus adspersus* (Walbaum)	x	x
Pricklebacks - Stichaeidae		
Snakeblenny, *Lumpenus lumpretaeformis* (Walbaum)		x
Daubed shanny, *Lumpenus maculatus* (Fries)		x
Radiated shanny, *Ulvaria subbifurcata* (Storer)	x	

(Continued)

Table 2. (Concluded).

Taxon	Occurrence MB	Occurrence Sheepscot
Gunnels - Pholidae		
Rock gunnel, Pholis gunnellus (Linnaeus)	x	
Wrymouths - Cryptacanthodidae		
Wrymouth, Cryptacanthodes maculatus Storer	x	x
Mackerels - Scombridae		
Atlantic mackerel, Scombrus scombrus Linnaeus	x	x
Butterfishes - Stromateidae		
Butterfish, Peprilus triancanthus (Peck)	x	x
Scorpionfishes - Scorpaenidae		
Ocean perch (redfish), Sebastes marinus (Linnaeus)		x
Searobins - Triglidae		
Northern searobin, Prionotus carolinus (Linnaeus)	x	
Striped searobin, Prionotus evolans (Linnaeus	x	
Sculpins - Cottidae		
Sea raven, Hemitripterus americanus (Gmelin)	x	x
Grubby, Myoxocephalus aenaeus (Mitchill)	x	x
Longhorn sculpin, Myoxocephalus octodecemspinosus (Mitchill)	x	x
Shorthorn sculpin, Myoxocephalus scorpius (Linnaeus)	x	x
Moustache sculpin, Triglops murrayi Günther		x
Mailed sculpin, Triglops nybelini Jensen	x	x
Pochers - Agonidae		
Alligatorfish, Aspidophoroides monopterygius (Bloch)		x
Lumpfishes and snailfishes - Cyclopteridae		
Lumpfish, Cyclopterus lumpus Linnaeus	x	
Seasnail, Liparis atlanticus (Jordan and Evermann)	x	
Lefteye flounders - Bothidae		
Summer flounder, Paralichthys dentatus (Linnaeus)	x	
Fourspot flounder, Paralichthys oblongus (Mitchill)	x	
Windowpane, Scophthalmus aquosus (Mitchill)	x	x
Righteye flounders - Pleuronectidae		
American plaice, Hippoglossoides platessoides (Fabricius)	x	x
Yellowtail flounder, Limanda ferruginea (Storer)		x
Smooth flounder, Liopsetta putnami (Gill)	x	x
Winter flounder, Pseudopleuronectes americanus (Walbaum)	x	x

Table 3. Fishes Sampled by Gill Netting in the Sheepscot River and Montsweag Bay/Back River System from 1970 through 1977.[a]

Species	Number caught	Relative abundance (%total catch)	Relative biomass (%total catch)
Alewife	9366	34.66	15.68
Blueback herring	5703	21.10	11.27
Rainbow smelt	3743	13.85	2.90
Atlantic herring	3576	13.23	1.72
Atlantic menhaden	3185	11.78	36.95
Atlantic mackerel	274	1.01	1.45
Striped bass	257	.95	6.54
Spiny dogfish	233	.86	21.66
Bluefish	166	.61	.16
Atlantic tomcod	117	.43	.32
American shad	112	.42	.73
White hake	74	.27	.18
Silver hake	64	.23	.14
White perch	52	.19	.02
Pollock	32	.11	.09
Butterfish	17	.06	.02
Winter flounder	16	.06	.03
Grubby	8	.03	<.01
Shorthorn sculpin	7	.03	.05
Smooth flounder	3	.01	<.01
Cunner	2	)	<.01
Hickory shad	2	)	<.01
Longhorn sculpin	2	)	<.01
Sea raven	2	)	<.01
Northern sea robin	1	) .05% combined	<.01
Red hake	1	)	<.01
Striped sea robin	1	)	<.01
Threespine stickleback	1	)	<.01
Windowpane	1	)	<.01

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[a] Maine Yankee Atomic Power Co. 1978.

Table 4. Relative Abundance by Number and Weight (kg) of all Fishes Collected by Otter Trawl in the Montsweag Bay - Sheepscot River Estuary, March 1971 - November 1977.[a]

Species	Number	%Number	Weight	%Weight
Atlantic tomcod	32349	39.0	1926.25	41.0
Winter flounder	24604	30.0	1176.96	25.0
Smooth flounder	7062	8.0	202.09	4.0
White hake	6203	8.0	330.68	7.0
Rainbow smelt	4241	5.0	130.05	3.0
Longhorn sculpin	3110	4.0	249.44	5.0
White perch	1092	1.0	16.49	0.4
Little skate	661	1.0	235.96	5.0
Grubby	594	1.0	15.49	0.3
Silver hake	586	1.0	66.04	1.0
Windowpane	381	0.5	31.01	0.7
Red hake	374	0.5	14.70	0.3
Sea raven	373	0.4	138.21	3.0
Ocean pout	357	0.4	37.79	0.8
Alewife	323	0.4	10.96	0.2
Atlantic cod	210	0.3	42.86	0.9
Shorthorn sculpin	150	0.2	10.41	0.2
Pollock	117	0.1	5.74	0.1
American plaice	70	0.1	3.32	0.1
Mailed sculpin	22	-	0.01	-
Cunner	19	-	3.57	0.1
Alligatorfish	19	-	<0.01	-
Atlantic herring	16	-	0.33	-
Atlantic menhaden	9	-	0.73	-
Threespine stickleback	8	-	<0.01	-
Thorny skate	8	-	0.40	-
Butterfish	7	-	0.39	-
Blueback herring	7	-	0.51	-
Northern pipefish	7	-	<0.01	-
Spiny dogfish	5	-	16.32	0.3
Atlantic silverside	4	-	<0.01	-
Moustache sculpin	4	-	0.02	-
Seasnail	4	-	0.03	-
American eel	3	-	0.93	-
Daubed shanny	3	-	<0.01	-
American shad	2	-	0.04	-
Winter skate	2	-	5.47	0.1
Ninespine stickleback	2	-	<0.01	-
Wrymouth	2	-	0.13	-
Snakeblenny	2	-	0.07	-
Ocean perch	2	-	0.02	-

(Continued)

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[a] Maine Yankee Atomic Power Co. 1978.

Table 4. (Concluded)

Species	Number	%Number	Weight	%Weight
Northern searobin	1	-	0.16	-
Yellowtail flounder	1	-	0.07	-
Summer flounder	1	-	1.08	-
Scup	1	-	0.02	-
Total	83018		4694.76	

Table 5. List of Fishes Found in Penobscot Bay by Central Maine Power Studies (1974 to 1975).

Taxonomic name	Common name
Alosa aestivalis	Blueback herring
Alosa pseudoharengus	Alewife
Ammodytes americanus	American sand lance
Anguilla rostrata	American eel
Apeltes quadracus	Fourspine stickleback
Aspidophoroides monopterygius	Alligatorfish
Brevoortia tyrannus	Atlantic menhaden
Clupea harengus	Atlantic herring
Cryptacanthodes maculatus	Wrymouth
Cyclopterus lumpus	Lumpfish
Enchelyopus cimbrius	Fourbeard rockling
Fundulus heteroclitus	Mummichog
Gadus morhua	Atlantic cod
Gasterosteus aculeatus	Threespine stickleback
Gasterosteus wheatlandi	Blackspotted stickleback
Glyptocephalus cynoglossus	Witch flounder
Hemitripterus americanus	Sea raven
Hippoglossoides platessoides	American plaice
Limanda ferruginea	Yellowtail flounder
Liopsetta putnami	Smooth flounder
Lumpenus lumpretaeformis	Snakeblenny
Macrozoarces americanus	Ocean pout
Medidia menidia	Atlantic silverside
Merluccius bilinearis	Silver hake
Microgadus tomcod	Atlantic tomcod
Morone saxatilis	Striped bass
Myoxocephalus aenaeus	Grubby
Myoxocephalus octodecemspinosus	Longhorn sculpin
Myoxocephalus scorpius	Shorthorn sculpin
Osmerus mordax	Rainbow smelt
Peprilus triacanthus	Butterfish
Pholis gunnellus	Rock gunnel
Pollachius virens	Pollock
Pomatomus saltatrix	Bluefish
Pseudopleuronectes americanus	Winter flounder
Pungitius pungitius	Ninespine stickleback
Raja erinacea	Little skate
Raja ocellata	Winter skate
Raja radiata	Thorny skate
Salvelinus fontinalis	Brook trout
Scomber scombrus	Atlantic mackerel
Scopthalmus aquosus	Windowpane

(Continued)

Table 5. (Concluded)

Taxonomic name	Common name
Squalus acanthias	Spiny dogfish
Stenotomus chrysops	Scup
Syngnathus fuscus	Northern pipefish
Tautogolabrus adspersus	Cunner
Triglops nybelini	Mailed sculpin
Urophycis chuss	Red hake
Urophycis regius	Spotted hake
Urophycis tenuis	White hake

Table 6. List of Fishes Captured by Trawl in Passamoquoddy Bay.[a]

Species	Species
Silver hake	
White hake	Barndoor skate
Fourbeard rockling	Butterfish
Alewife	Grubby
Pollock	Moustache sculpin
Winter skate	Shorthorn sculpin
Little skate	Goosefish
Capelin	Atlantic tomcod
American plaice	Wrymouth
Thorny skate	Atlantic hagfish
Sea raven	Artic hookear sculpin
Alligatorfish	Lumpfish
Redfish	Rock gunnel
Longhorn sculpin	Radiated shanny
Atlantic cod	Atlantic halibut
Winter flounder	Yellowtail flounder
Snakeblenny	Smooth skate
Ocean pout	Witch flounder
Rainbow smelt	Daubed shanny
Haddock	
Atlantic herring	

a. Tyler 1971.

Table 7 Fishes Recorded in the Deer Isle/Campobello Area and Vicinity.

Marsipobranchii
- Myxine glutinosa (Hagfish)
- Petromyzon marinus (Lamprey)

Selachii
- Carcharias taurus (Sand shark)*
- Alopias vulpinus (Thresher shark)*
- Carcharodon carcharias (White shark)
- Lamna nasus (Porbeagle)
- Mustelus canis (Smooth dogfish)*
- Rhizoprionodon terraenovae (Atlantic sharpnose shark)*
- Somniosus microcephalus (Greenland shark)
- Squalus acanthus (Spiny dogfish)
- Raja erinacea (Little skate)
- R. laevis (Barndoor skate)
- R. ocellata (Winter skate)
- R. radiata (Thorny skate)
- Torpedo nobiliana (Atlantic torpedo)

Pisces
- Acipenser oxyrhynchus (Atlantic sturgeon)
- Alosa pseudoharengus (Alewife)
- A. sapidissima (American shad)
- Brevoortia tyrannus (Menhaden)*
- Clupea harengus (Herring)
- Etrumeus sadina (Round herring)*
- Coregonus clupeaformis (Lake whitefish)*
- Salmo salar (Atlantic salmon)
- Salvelinus fontinalis (Brook trout)
- Mallotus villosus (Capelin)*
- Osmerus mordax (Smelt)
- Mauroclicus muelleri (Muller's Pearlsides)*
- Anguilla rostrata (American eel)
- Conger oceanicus (Conger eel-larval)*
- Scomberesox saurus (Atlantic saury)*
- Hyporhamphus sp. (Common halfbeak)*
- Fundulus heteroclitus (Mummichog)
- Syngnathus fuscus (Northern pipefish)
- Apeltes quadracus (Fourspine stickleback)
- Gasterosteus aculeatus (Threespine stickleback)
- G. wheatlandi (Blackspotted stickleback)
- Pungitius pungitius (Ninespine stickleback)
- Brosme brosme (Cusk)
- Enchelyopus cimbrius (Fourbeard rockling)
- Gadus morhua (Atlantic cod)
- Melanogrammus aeglefinus (Haddock)

(*) Rare or occasional occurrence.

(Continued)

Table 7 (Continued)

Pices (Cont.)

Merluccius bilinearis (Silver hake)
Microgaddus tomcod (Atlantic tomcod)
Pollachius virens (Pollock)
Urophycis chuss (Squirrel hake)
Nezumia bairdi (Marlin spike)*
Zenopsis ocellata (American John Dory)*
Roccus americanus (White perch)
R. saxatilis (Striped bass)
Stenotomus chrysops (Scup)*
Tautoga onitis (Tautog)*
Tautogolabrus adspersus (Cunner)
Ammodytes americanus (American sand lance)
Sarda sarda (Atlantic bonito)*
Scomber colias (Chub mackerel)
S. scombrus (Atlantic mackerel)
Thunnus thynnus (Bluefin tuna)
Anarhichas lupus (Atlantic wolffish)
A. minor (Spotted wolffish)*
Pholis gunnellus (Rock gunnell)
Cryptacanthodes maculatus (Wrymouth)
Lumpenus lumpretaeformis (Snake blenny)
Ulvaria subbifurcata (Radiated shanny)
Lycenchelys verrilli (Wolf eelpout)*
Macrozoarces americanus (Ocean pout)
Poronotus triacanthus (Butterfish)
Menidia menidia (Atlantic silverside)
Sebastes marinus (Redfish)
Prionotus carolinus (Northern searobin)
P. evolans (Striped searobin)*
Artediellus uncinatus (Artic hookear sculpin)*
Gymnocanthus tricuspis (Artic staghorn sculpin)*
Hemitripterus americanus (Atlantic sea raven)
Myoxocephalus octodecemspinosus (Longhorn sculpin)
M. scorpius (Shorthorn sculpin)
Triglops murrayi (Mailed sculpin)*
Aspidophoroides monopterygius (Alligatorfish)*
Cyclopterus lumpus (Lumpfish)
Eumicrotremus spinosus (Atlantic spiny lumpfish)*
Liparis atlanticus (Atlantic seasnail)
L. liparis (Striped seasnail)
Paralichthys dentatus (Summer flounder)*
P. oblongus (Fourspot flounder)*
Scophthalmus aquosus (Windowpane)
Glyptocephalus cynoglossus (Witch flounder)
Hippoglossoides platessoides (American plaice)

(Continued)

Table 7 (Concluded).

Pices (Cont.)

- H. hippoglossus (Atlantic halibut)
- Liopsetta putnami (Smooth flounder)
- Pseudopleuronectes americanus (Winter flounder)
- Monacanthus hispidus (Planehead tilefish)*
- Mola mola (Ocean sunfish)*
- Lophius americanus (Monkfish)

Table 8. Species and Occurrence of Ichthyoplankton Caught in the Buoyed and Anchored Plankton Nets Set in Montsweag Bay and the Sheepscot River From August 1970 to Present.

Species	Common name	Family	Occurrence
Alosa aestivalis (Mitchill)	Blueback herring	Clupeidae	A-J
Alosa pseudoharengus (Wilson)	Alewife	Clupeidae	(M*)
Ammodytes americanus (DeKay)	American sand lance	Ammodytidae	Both
Anguilla rostrata (Lesueur)	American eel	Anguillidae	Both
Apeltes quadracus (Mitchill)	Fourspine stickleback	Gasterosteidae	A-J
Aspidophoroides monopterygius (Bloch)	Alligator fish	Agonidae	Both
Brevoortia tyrannus (Latrobe)	Atlantic menhaden	Clupeidae	(S*)
Clupea harengus (Linnaeus)	Atlantic herring	Clupeidae	Both
Conger oceanicus (Mitchill)	Conger eel	Congridae	Both*
Cryptacanthodes maculatus (Storer)	Wrymouth	Cryptacanthodidae	Both
Cyclopterus lumpus (Linnaeus)	Lumpfish	Cyclopteridae	Both
Enchelyopus cimbrius (Linnaeus)	Fourbeard rockling	Moridae	Both
Gadus morhua (Linnaeus)	Atlantic cod	Gadidae	M*, S
Gasterosteus aculeatus (Linnaeus)	Threespine stickleback	Gasterosteidae	A-J
Gasterosteus wheatlandi (Putnam)	Blackspotted stickleback	Gasterosteidae	A-J

M =larvae caught in Montsweag Bay only; S = larvae caught in Sheepscot River only;
Both = larvae caught in each location; * = larvae occasionally caught;
A-J = adults and/or juveniles caught but larvae not found or identified yet;
underlined letter(s) = larvae identified from pre-operational samples only;
() = larvae identified from operational samples only.

(Continued)

Table 8. (Continued)

Species	Common name	Family	Occurrence
Hemitripterus americanus (Gmelin)	Sea raven	Cottidae	M*, S
Hippoglossoides platessoides (Fabricius)	American plaice	Pleuronectidae	Both*
Liopsetta putnami (Gill)	Smooth flounder	Pleuronectidae	Both
Liparis atlanticus (Jordan & Evermann)	Seasnail	Cyclopteridae	Both
Liparis coheni	Seasnail	Cyclopteridae	?
Liparis inquillinus	Seasnail	Cyclopteridae	?
Lumpenus lumpretaeformis (Walbaum)	Snakeblenny	Stichaeidae	Both
Lampenus maculatus (Fries)	Daubed shanny	Stichaeidae	(Both*)
Macrozoarces americanus (Bloch & Schneider)	Ocean pout	Zoarcidae	(Both*)
Menidia menidia (Linnaeus)	Atlantic silverside	Atherinidae	(Both*)
Merluccius bilinearis (Mitchill)	Silver hake	Gadidae	S*
Microgadus tomcod (Walbaum)	Atlantic tomcod	Gadidae	Both
Myoxocephalus aenaeus (Mitchill)	Grubby	Cottidae	Both
Myoxocephalus octodecemspinosus (Mitchill)	Longhorn sculpin	Cottidae	Both
Myoxocephalus scorpius (Linnaeus)	Shorthorn sculpin	Cottidae	Both
Osmerus mordax (Mitchill)	Rainbow smelt	Osmeridae	Both
Petromyzon marinus (Linnaeus)	Sea lamprey	Petromyzontidae	(S*)
Pholis gunnellus (Linnaeus)	Rock gunnel	Pholidae	Both
Pollachius virens (Linnaeus)	Atlantic pollack	Gadidae	(Both*)
Pseudopleuronectes americanus (Walbaum)	Winter flounder	Pleuronectidae	Both
Pungitius pungitius (Linnaeus)	Ninespine stickleback	Gasterosteidae	A-J
Raja erinacea (Mitchill)	Little skate	Rajidae	Both*
Scophthalmus aquosus (Mitchill)	Windowpane	Bothidae	Both
Sebastes marinus (Linnaeus)	Redfish or Ocean perch	Scorpaenidae	Both*
Syngnathus fuscus (Storer)	Northern pipefish	Syngnathidae	Both
Tautogolabrus adspersus (Walbaum)	Cunner	Labridae	Both*
Tautoga onitis	Tautog	Labridae	S
Triglops murrayi (Gunther)	Moustache sculpin	Cottidae	A-J
Ulvaria subbifurcata (Storer)	Radiated shanny	Stichaeidae	Both

(Continued)

Table 8. (Concluded).

Species	Common name	Family	Occurrence
Urophycis chuss (Walbaum)	Red hake	Gadidae	A-J
Urophycis tenuis (Mitchill)	White hake	Gadidae	A-J

Table 9. Numerical Rank, Total Numbers Caught for each Larval Fish Species, and Percent Species Composition Based on Total Catch for the Pre-operational Period from August 1970 to June 1972 (Hauser, 1973), and the Operational Period from January 1973 to December 1977, for the Sheepscot River - Montsweag Bay Estuary.

Species	Pre-operational period			Operational period		
	Numerical rank	Total no. caught	% species composition based on total catch	% species composition based on total catch	Total no. caught	Numerical rank
Pholis gunnellus (Rock gunnel)	1	18036	31.17	23.30	27160	2
Clupea harengus (Atlantic herring)	2	11950	20.65	32.32	37661	1
Osmerus mordax (Rainbow smelt)	3	11087	19.16	15.54	18108	3
Sculpin group [1]	4	9462	16.35	11.27	13128	4
Flounder group [2]	5	3246	5.61	-	-	-
Pseudopleuronectes americanus (Winter flounder)	-	-	-	5.86	6828	5
Liopsetta putnami (Smooth flounder)	-	-	-	1.55	1811	7
Anguilla rostrata (American eel)	6	1035	1.79	2.15	2507	6
Liparis spp. (Seasnail)	7	859	1.52	.53	620	12
Microgadus tomcod (Atlantic tomcod)	8	655	1.13	1.41	1638	8
Ulvaria subbifurcata (Radiated shanny)	9	496	.86	1.07	1248	9

[1] May include: *Myoxocephalus aenaeus* (Grubby), *M. octodecemspinosus* (Longhorn sculpin), *M. scorpius* (Shorthorn sculpin), and *Triglops murrayi* (Moustache sculpin).

[2] May include: *Liopsetta putnami* (Smooth flounder) and *Pseudopleuronectes americanus* (Winter flounder).

[3] May include: *Apeltes quadracus* (Fourspine stickleback), *Gasterosteus aculeatus* (Threespine stickleback), *G. wheatlandi* (Blackspotted stickleback), and *Pungitius pungitius* (Ninespine stickleback).

[4] Not included in pre-operational summary, later published by Hauser (1975).

(Continued)

Table 9. (Continued)

Species	Pre-operational period			Operation period		
	Numerical rank	Total no. caught	% species composition based on total catch	% species composition based on total catch	Total no. caught	Numerical rank
Aspidophoroides monopterygius (Alligatorfish)	10	282	.49	.38	445	14
Cryptacanthodes maculatus (Wrymouth)	11	259	.45	.39	452	13
Lumpenus lumpretaeformis (Snakeblenny)	12	161	.28	.07	83	16
Syngnathus fuscus (Northern pipefish)	13	98	.17	.89	1038	10
Stickleback group [3]	14	58	.10	.04	50	20
Cyclopterus lumpus (Lumpfish)	15	53	.09	.54	624	11
Scophthalmus aquosus (Windowpane)	16	52	.09	.21	249	15
Hemitripterus americanus (Sea raven)	17	31	.05	.05	54	19
Gadus morhua (Atlantic cod)	18	9	.02	.01	15	23
Ammodytes americanus (American sand lance)	19	6	.01	.07	77	17
Tautogolabrus adspersus (Cunner)	20	3	< .01	.04	45	21
Hippoglossoides platessoides (American plaice)	21	3	< .01	.06	69	18
Tautoga onitis (Tautog)	22	2	< .01	-	-	-
Enchelyopus cimbrius (Fourbeard rockling)	23	1	< .01	.03	41	22

(Continued)

Table 9. (Concluded)

Species	Pre-operational period			Operation period		
	Numerical rank	Total no. caught	% species composition based on total catch	% species composition based on total catch	Total no. caught	Numerical rank
Merluccius bilinearis (Silver hake)	24	1	< .01	-	-	-
Sebastes marinus (Red fish)	25	1	< .01	-	-	-
Unidentified species	-	24	.04	-	-	-
Menidia menidia (Atlantic silverside)	-	-	-	.01	8	24
Lumpenus maculatus? (Daubed shanny)	-	-	-	.01	6	25
Macrozoarces americanus (Ocean pout)	-	-	-	< .01	4	26
Alosa pseudoharengus (Alewife)	-	-	-	< .01	2	27
Brevoortia tyrannus (Atlantic menhaden)	-	-	-	< .01	2	28
Pollachius virens? (Atlantic pollock)	-	-	-	< 0.1	2	29
Conger oceanica [4] (Conger eel)	-	2	-	< 0.1	1	30
Petromyzon marinus (Sea lamprey)	-	-	-	< .01	1	31
Unidentified flatfish	-	-	-	.16	188	-
Unidentified Gadids	-	-	-	.01	10	-
Unidentified larvae	-	-	-	< .01	1	-
USV (unidentified pieces or fragments of fish)	-	-	-	2.02	2358	-
Total		57,870	100.03%	99.99%	116534	

Table 10. History of Fish Stocking in Coastal Maine Lakes.[a]

Region	Lake or pond	Last year stocked
Brown trout		
1	Highland Lake	1974
2	Meetinghouse Pond	
2	Pinkham Pond	
3	North Pond	1968
3	Duckpuddle Pond	1967
3	Pemaquid Pond	
3	South Pond	1968
4	Heart Pond	1975
4	Chickawaukie	
5	Branch Lake	1953
5	Flanders Pond	1977
5	Lower Hadlock Pond	1974
5	Upper Hadlock Pond	1977
Brook trout		
2	Nequasset Lake	
2	Knickerbocker Lake	
2	Anderson Pond	
4	Jacob Buck Pond	1959
4	Craig Pond	1977
4	Heart Pond	1959
4	Toddy Pond	1964
4	First Pond	
4	Halfmoon Pond	1977
4	Lily Pond	1977
4	Long Pond	1977
5	Halfmoon Pond	1977
5	Schoodic Lake	1966
5	Green Lake	1970
5	Branch Lake	1971
5	Lower Patten Pond	1962
5	Simmons Pond	1967
5	Little Tunk Pond	1977
5	Flanders Pond	1975
5	Donnell Pond	1964
5	Tilden Pond	1977
5	Salmon Pond	1977
5	Little Long Pond	1977
5	Spring River Lake	1973
5	Tunk Lake	1974
5	Rainbow Pond	1977
5	Fox Pond	1969
5	Bubble Pond	1976

(Continued)

Table 10. Continued.

Region	Lake or pond	Last year stocked
Brook trout (Cont.)		
5	Chicken Mill	1977
5	Jones Pond	1970
5	Eagle Lake	1977
5	Jordan Pond	1968
5	Lower Hadlock Pond	1968
5	Upper Hadlock Pond	1977
5	Great Pond	1968
5	Echo Lake	1974
5	Seal Cove Pond	1971
6	Indian Lake	1977
6	Peaked Mt. Pond	1973
6	Kelly Lake	1977
6	Six Mile Lake	1977
6	Holmes Pond	1974
6	Sunken Lake	1977
6	Lily Lake	1977
6	Nashs Lake	1968
6	Keenes Lake	1977
6	Shattuck Lake	1975
6	Goulding Lake	1977
6	Moneymaker Lake	1977
Largemouth bass		
2	Center Pond	
2	Pleasant Pond	
2	Joice Pond	
2	Sherman Lake	
2	Dam Pond	
2	Three Cornered Pond	
3	Grassy Pond	1972
3	Forest Pond	1970
3	Havener Pond	1967
3	Sidensparker Pond	1959
4	Pierce Pond	1955
4	Cain Pond	1975
4	Torry Pond	1959
4	Fresh Pond	1964
Landlocked salmon		
2	Nequasset Lake	
Smallmouth bass		
3	Webber Pond	1956

(Continued)

Table 10. Continued.

Region	Lake or pond	Last year stocked
Lake trout		
3	Damariscotta Lake	1972
4	Toddy Pond	1976
5	Green Lake	1977
5	Donnell Pond	1977
5	Tunk Lake	1973
5	Eagle Lake	1977
5	Jordan Pond	1970
Alewife		
3	Kalers Pond	1967
4	Fresh Pond	1972
Salmon		
3	Damariscotta Lake	1977
3	Biscay Pond	1976
4	Jacob Buck Pond	1977
4	Long Pond	1977
5	Round Pond	1965
5	Schoodic Lake	1976
5	Green Lake	1976
5	Branch Lake	1977
5	Lower Patten Pond	1975
5	Flanders Pond	1970
5	Donnell Pond	1977
5	Long Pond	1965
5	Spring River Lake	1977
5	Tunk Lake	1977
5	Jones Pond	1975
5	Eagle Lake	1977
5	Jordan Pond	1970
5	Great Pond	1977
5	Echo Lake	1976
6	Boyden Lake	1975
6	Nasks Lake	1976
4	Toddy Pond	1977
Rainbow trout		
4	Meganticook Lake	1974
4	Lond Pond	1977
5	Echo Lake	1977
Sunapee trout		
5	Little Long Pond	1977
5	Echo Lake	1976

(Continued)

Table 10. Concluded.

Region	Lake or pond	Last year stocked
Chain pickerel		
4	Meadow Pond	1956
Stickleback		
6	Six Mile Lake	1975

[a] MDIFW, MIDAS files

CHAPTER 13

Table 1. Inventory of Seal Haulout Sites [a]

Location	Seals		Region total
	pups	total	
Region 1			
Clapboard Island	7	27	
Mill Creek	7	41	
Halfway Rock	-	10	
Ft. Georges		2	
Stave Island		3	
Brown Cow		1	
Inner Green Island	2	66	
Lower Basket Island Ledge	5	15	
Upper Basket Island Ledge		17	
Sturdevant Island Ledge	1	7	
Sandy Pt. Ledges		1	
Wolfs Neck	1	4	
Flying Pt. Ledge	9	28	
Moshier Island	4	13	
Upper Green Island	3	14	
French Island	11	35	
Bustin's Ledge		4	
Little Whaleboat Island	4	16	
Sister Island	5	18	
Sister Ledge	3	8	
Lookout Pt. Harpswell Neck	3	14	
Birch Island		2	
Goose Island	5	24	
Brant Ledges	5	18	
Goslings Island	1	2	
Dog's Head Ledge	3	6	
N. Gun Pt. Cove	5	22	
Bragdon Rock New Meadows R.	1	5	423
Region 2			
Seguin Ledge	4	24	
W. Black Ledge	2	8	
Seal Rocks Montsweag Bay		2	
Halftide Rock Montsweag Bay		2	
Castle Island Ledge Hockamock Bay	1	9	
Sequin Ledge		45	
Black Rocks		1	
Isle of Springs		5	
Hodgdon Ledge Sheepscot River		6	
Greenleaf Cove	2	36	

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[a] Richardson 1973.

(Continued)

Table 1. Continued

Location	Seals		Region total
	pups	total	
Region 2 (Continued)			
Cat Ledges		6	
Pumpkin Island	15	248	
Pumpkin Ledge		24	
Hypocrites Ledges	4	25	
Peters Island Cove Dam. River		58	
Peabow & Foster Island Ledges		27	
Holbrook Ledge Linekin Bay		7	501
Region 3			
Webber Dry Ledge		15	
Jones Neck Ledge Medomak River		22	
Bremen Long Island Ledge		22	
L. W. of Cow Island		3	
Wreck Island Ledges		14	
Duck Rocks, Monhegan		4	
Shark Island		18	
Seal Ledges Old Hump Channel		11	
Gay Island St. Georges River		2	
Crotch Island Ledges Friendship		36	
Gunning Rocks Port Clyde		61	
Two Bush Reef		45	
L. N. of Two Bush		11	
Dix Island Harbor		20	
Dagger Island			
Griffin Ledge E. of Vinalhaven		13	
Clam Ledges		21	
Black Rock, Metinic Island		14	
Southeast Breaker		103	
Black Rocks, Matinicus and L. S. of Ragged Island		16	
Brig & Seal L. S.W. of Ragged Is.		161+	
N.E. Seal Island	1	4	
Eastern Ledge, Seal Island		47	629

(Continued)

Table 1. Continued

Location	Seals		Region total
	pups	total	
Region 4			
Green Island Seal Ledges		107	
Saddleback Ledge		33	
Scraggy Ledge		57	
Outer Scragg Ledge		102	
Sparrow Island Ledge	2	40	
L. SW of Crotch Island Deer Island Thorofare		72	
Long Ledge E. of Stimson Neck		4	
Crow Island		58	
Potato Island Ledge		1	
Tinker Ledges Eggemoggin Reach		6	
Thrumcap Ledge Eggemoggin		60	
Rocks S. of Pickering Island		210	
Spoon Ledge		83	
Fling Island Ledge		48	
		52	
Grass Ledge		16	
		8	
		45	
Dagger Ledge		43	
Colt Head Ledge		21	
Smith Cove Ledge Castine		19	
Odum Ledge Sandy Pt.		3	
Parker Cove Ledge Islesboro		13	
Minot Island Ledge		28	
Mouse Island Ledge		21	
Ledge South of Mouse Island		3	
Goose Island		94	
Robinson Rk.		25	
Rks. N. of Ram Island	2	69	
Brewster Pt. Ledge Glen Cove		14	
Dry Money Ledge		7	
Otter Ledge	1	2	
Sunken Money Ledge		2	
John Island Dry Ledge	2	72	
Yellow Ledge E. of Marshall Island		16	
Hat Island & Ledge		1	
Heron Island Pt. Ledge	3	53	

Continued

Table 1. Continued

Location	Seals		Region total
	pups	total	
Region 4 (continued)			
Black Ledge S. of Marshall Island	1	12	
Boxam Ledge		1	
Spirit Ledge		2	
Great Spoon Ledge		16	
White Horse Ledge		13	
Eastern Ear, Isle Au Haut		25	
Black Ledge W. of Western Ear	2	7	
Outer Brandies	4	22	
Marsh Cove Ledge S. of Kimball Is.		9	
Fog Island		1	
White Ledge	9	61	
Popplestone Ledges	3	33	1576
Region 5			
Egg Rock, Bois Bubert Island		1	
Old Bull & Bar Ledges		35	
Stanley Pt. Ledge Dyer Neck	2	24	
Big Black Ledge		8	
Turtle Island Ledge		75	
Long Ledge, Flanders Bay		2	
Halftide Ledge Flanders Bay	5	20	
Burying Island Ledges		19	
Youngs Pt. Ledge, Skillings R.	3	8	
Seal Pt. Ledge, Skillings R.	5	62	
Ingalls to Bears Island Ledges	5	26	
East Bunker Ledge		42	
Gut Ledges Cranberry Isles		33	
South Bunker Ledge		2	
Sargeant Pt. Ledge Somes Sound		11	
Rocks N. Grt. Gott Island		8	
Outer Dawes Ledge Black Island		59	
Horshoe Ledge		2	
Green Island, East	2	15	
Little Duck Island		1	
Egg Rock, Jerico Bay	2	12	
Long Ledge York Narrows		25	
Ledges S.E. Johns Island	4	47	

Continued

Table 1. Continued

Location	Seals		Region total
	pups	total	
Region 5 (continued)			
Ship & Barge Ledge	7	42	
Green Island Light	4	31	
Flye Island Penn.		4	
Rummel Island & Ledge		10	
Cow & Calf Ledge, Tinker Island		1	
Rks. S.W. of Hardwood Island	1	2	
Green Island Ledges N.E.	16	65	
Tupper Ledge Union R. Bay		22	
Mill Cove Ledge, Bayside		5	
Jed Island S. Morgan Bay	10	54	
South Ledge		44	
Darling Island Ledge	3	4	
Blue Hill Ledges Blue Hill Falls	6	66	
Petit Manan Bar Bull and Bar Ledge	3	65	
Ledge W. of Bois Bubert Island		17	
Pea Ledges		25	
Ledge E. of Bois Bubert Island	1	34	
Black Ledge		24	
Trafton Halftide Ledge		11	
Ledge E. of Foster Island		32	
Bunker Ledge		42	1305
Region 6			
Green Island Tibbett Narrows	1	21	
Ledge S. of Inner Sand Island	1	22	
Ledge S. of Outer Sand Island		36	
Outer Sand Island		8	
Seal Rk., Fisherman Island		57	
Morton Ledges		59	
Pomp Island Ledge		11	
Hardwood Ledge		4	
Little Pond Hd. Grt. Wass Island		164	
Green Island Moosepeak		40	
Mink Island		9	
Ledge W. of Mink Island		72	
Ledge E. of Sand Cove Grt. Wass Island		30	
Ledges E & N of Sand Cove Spectacle Island		94	

Continued

Table 1. Concluded

Location	Seals		Region total
	pups	total	
Region 6 (continued)			
Kelly Pt. Jonesport		3	
Bunker Hole Ledge Little Spruce Is.		65	
Bar Island, Chandler Bay		6	
Double Shot Island		22	
Anguilla Island	1	14	
Shag Ledge S of Starboard Pt.		7	
Ledges N of Hog Island Holmes Bay		30	
Cross Island Narrows Cutler		143	
Long Ledge, Little Machias Bay		25	
Wormell Ledges W. Quoddy Hd.		16	
Hockins Ledge, Seward Neck Cobscook Bay		25	
Gangway Ledge, Leighton Neck		37	
Little Dram Island Dennis Bay		12	
Straight Bay Ledge N. Trescott		82	
Broad Cove Ledge Whiting Bay		18	1135

Table 2 Significant Seal Haulouts in the Characterization Area [a]

Region	Haulout area	Coordinates		Criteria [b]
		latitude	longitude	
1	Inner Green Is., Casco Bay	43°40'00"	70°06'18"	c,e
1	French Is., Casco Bay	43°37'10"	70°04'55"	a
1	Goose Is., Harpswell	43°48'05"	70°01'55"	e
2	Sequin L., Georgetown	43°43'20"	69°45'20"	d,e
2	Pumpkin Is. and Ledges, Boothbay	43°45'20"	69°35'00"	a,c,d,e
3	Wreck Is. Ledges, Bristol	43°55'00"	69°23'45"	d,e
3	Crotch Is. Ledges, Friendship	43°57'55"	69°19'35"	d,e
3	Gunning Rks., The Brothers, St. George	43°54'35"	69°15'00"	c,d,e
3	Southeast Breaker, Metinic Is., Metinic Green Island	43°51'48"	69°08'06"	b,c,e
4	Green Is. Seal ledges, Large and Little Green Islands	43°53'30"	68°59'45"	b,c,e

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[a] Richardson 1975

[b] Criteria: a = haulout area where counts of pups have exceeded ten; significant whelping area.
b = haulout area where gray seals are frequently sighted.
c = haulout area where counts have exceeded 65 harbor seals; apparently an area affording protection and favorable foraging
d = a "traditional" seal ledge important for it's geographic location, unspoiled wilderness value or near publically or privately held islands (National Park, Federal, State or private conservation islands).
e = haulout area coinciding with or near important nesting islands for shore birds

(Continued)

Table 2 (Continued)

Region	Haulout area	Coordinates		Criteria [b]
		latitude	longitude	
4	Brig Ledge, Criehaven, Matinicus Rk.	43°49'05"	68°52'40"	b,c,d,e
4	Seal Island	43°53'35"	68°43'55"	b,e
4	Crotch Is. Ledges, Deer Isle	44°08'05"	68°41'10"	c
4	Thrumcap L. and Island, Brooksville	44°19'18"	68°45'30"	c,e
4	Pickering Is. ledges, Deer Isle	44°15'00"	68°45'00"	c
4	Spoon and Dagger ledge group, Northhaven	44°12'06"	68°49'42"	c,e
4	Goose Is., Northhaven	44°11'06"	68°57'12"	c,e
4	Ram Island, Isleboro	44°20'20"	68°55'30"	c
4	Heron Is. Pt. L., Swans Is.	44°05'50"	68°28'40"	c,e
4	White and Popplestone Ledges, Isle Au Haut	44°05'15"	63°33'40"	a,b,c,d
4	Casco Passage Ledges, Swans Island	44°11'30"	68°28'40"	a,b,c,d
5	Old Bull & Bar Ledge, Petit Manan	44°23'30"	67°53'15"	b,d,e
5	Turtle Island Ledge, Winter Harbor	44°21'15"	68°06'10"	c
5	Halftide L., Flanders Bay	44°28'50"	68°08'10"	a,c,d
5	Seal Pt. L., Skillings River, Sullivan	44°31'00"	68°18'00"	a,c,d
5	Ingalls Is. L., Sorrento	44°24'00"	68°12'30"	d,e
5	East Bunker L., Seal Harbor	44°16'50"	68°13'20"	b,c,d
5	Outer Dawes L., Green Islands, Swans Island	44°10'40"	68°20'00"	a,b,c,d,e
5	Little Duck Island	44°10'30"	68°14'45"	b,c,d,e
5	John Is.,Dry L., Swans Island	44°06'10"	68°24'50"	a,b,c,d,e
5	Green Is. ledges, Mt. Desert Is.	44°23'25"	68°23'00"	a,c,d,e

(Continued)

Table 2 (Concluded)

Region	Haulout area	Coordinates		Criteria [b]
		latitude	longitude	
5	Jed Island, South L., Blue Hill	44 24'20"	68 29'10"	a,c
5	Blue Hill Falls L's.	44 23'20"	68 33'40"	a,c
6	Norton, Pomp, Hardwood Ledges, Jonesport	44 30'05"	67 38'50"	c
6	Grt. Pond Hd., Grt. Wass Island	44 27'30"	67 33'50"	c
6	Mink Island L's., Beals	44 29'00"	67 34'00"	c
6	Spectacle Is., L's., Beals	44 30'20"	67 34'00"	c
6	Bunker Hole L. Grt. Spruce Is., Roque Bluff's	44 33'00"	67 30'30"	c,d,e
6	Mink Is. L's. Cross Island Narrows, Cutler	44 37'	67 17'	c,e
6	Straight Bay L's., No. Trescott	44 51'30"	67 07'00"	c,e
6	North Rock and Machias Seal Is, Lower Bay of Fundy			b,e

Table 3. Location and Ownership of Islands and Ledges along the Coast of Maine Where Richardson (1976) Reported Gray Seals. The Total Number of Seals Observed Reflects Observations Over Several Years.

Region	Ledge or island	Lat. and long.	Size (acres)	Owner	Total number of gray seals observed
4	Dry Money L.	4408/6822	< 4	State[c]	1
4	Long I., York Narrows	4412/6828	< 4	State[c]	2
5	Inner Green Is.	4409/6820	6	State	6
5	Outer Green Is.	4409/6820	< 4	State	5
5	Outer Dawes L., Black Is.	4412/6828	5	Private[a]	15
5	Little Duck Is.	4410/6815	85	Private[b]	5
5	Gut L., Cranberry Is.	4415/6814	< 4	State	4
5	East Bunker L.	4417/6813	< 4	State[c]	17
1	Inner Green Is.	4340/7006	< 4	State	1
3	Metinic Green Is.	4352/6908	7	Private	5
4	Large Green Is.	4354/6900	82	State	1
4	Green Is., Seal Ledges	4353/6900	--	State	23
4	Brig L.	4349/6853	< 4	State[c]	1
4	Wooden Ball Is.	4351/6849	136	Private	1
4	Malcom L.	4352/6846	--	State	1
4	Seal Is.	4353/6844	100	USFWS	3
5	Mt. Desert Rock	4357/6806	--	---	1
4	Large Spoon Is.	4402/6833	50	Private	1
4	Black L.	4405/6830	< 4	State[c]	8
4	Spirit L.	4405/6831	< 4	State	1
4	John Is. Dry L.	4411/6825	< 4	State[c]	20
4	Sunken Money L.	4407/6822	--	Private	1

[a] All islands listed "private" have only one owner.

[b] Owned by the National Audubon Society.

[c] These islands are among those which the Maine Bureau of Public Lands desires to transfer management authority to the National Marine Fisheries Service for seal habitat.

(Continued)

Table 3. (Concluded)

Region	Ledge or island	Lat. or long.	Size (actes)	Owner	Total number of gray seals observed
5	Egg Rock	4421/6808	---	USFWS	13
5	Bull and Bar L.	4423/6753	---	USFWS	4
6	Double Hd. Shot Is.	4434/6729	<4	Private	2
6	North Rock	4432/6705	<4	---	4
4	Little Green Is.	4354/6902	40	Private	2

CHAPTER 14

APPENDIX I

Waterbird Nesting Islands in Coastal Maine According to Korschgen 1979
(see also atlas map 4)

Region 1

Waterbird Nesting Islands	State Island Number (b)	Colony Number	Size (Acres)	Lat N.	Long W.	Town	Quad.
Bangs Island (a)	55 412	296 023	58	43 44	70 05	Cumberland	S. Harpswell
Bates Island	55 440	296 030	6	43 42	70 05	Cumberland	S. Harpswell
Black Rock	55 252	296 004	<4	43 48	70 00	Harpswell	Freeport
Cedar Ledge	55 179	297 073	<4	43 45	69 57	Harpswell	Orrs Island
Clapboard Island Ledge(a)	55 328	296 010	<4	43 43	70 12	Falmouth	Portland East
Crow Island	55 331	297 011	<4	43 43	70 08	Portland	Portland East
Crow Island	55 358	296 012	<4	43 41	70 11	Portland	Portland East
Crow Island	55 411	296 022	<4	43 44	70 07	Cumberland	S. Harpswell
Duck Rock (a)	55 156	297 067	<4	43 46	69 55	Harpswell	Orrs Island
Eagle Island (a) (c)	55 439	296 028	16	43 43	70 03	Harpswell	S. Harpswell
E. Brown Cow Island	55 632	297 106	<4	43 42	69 53	Harpswell	Bailey Island
Elm Island	55 174	297 069	6	43 45	69 56	Harpswell	Orrs Island
Flag Island	55 177	297 074	23	43 45	69 53	Harpswell	Orrs Island
French Island	55 271	296 007	22	43 47	70 04	Freeport	Freeport
Goose Nest Island	55 400	296 017	<4	43 44	70 05	Cumberland	S. Harpswell
Grassy Ledge (a)	55 259	296 005	<4	43 47	70 03	Harpswell	Freeport
Horse Island	55 405	296 020	10	43 44	70 03	Harpswell	S. Harpswell
House Island	55 381	296 014	30	43 39	70 12	Portland	Portland East
Inner Green Island (a)	55 499	296 033	<4	43 40	70 07	Portland	S. Harpswell
Irony Island	55 264	296 006	<4	43 47	70 02	Harpswell	Freeport
Jenny Island	55 159	297 068	4	43 46	69 55	Harpswell	Orrs Island
Junk of Pork Island (a)	55 466	296 034	<4	43 39	70 07	Portland	S. Harpswell
Little Birch Island (a)	55 406	296 019	8	43 44	70 03	Harpswell	S. Harpswell
Little Mark Island	55 437	296 031	<4	43 42	70 02	Harpswell	S. Harpswell
Long Ledge	55 175	297 070	<4	43 45	69 54	Harpswell	Orrs Island
Long Ledge	55 176	297 071	<4	43 45	69 54	Harpswell	Orrs Island
Mark Island (c)	55 630	297 104	11	43 43	69 54	Harpswell	Bailey Island
Ministerial Island	55 424	296 026	14	43 43	70 05	Cumberland	S. Harpswell
Outer Green Island (a)	55 386	296 015	<4	43 39	70 07	Portland	Portland East
Pinkham Island	55 404	296 021	8	43 44	70 01	Harpswell	S. Harpswell
Pond Island	55 615	297 102	30	43 44	69 58	Harpswell	Bailey Island
Ragged Island	55 626	297 103	73	43 44	69 56	Harpswell	Bailey Island
Ram Island (a)	55 383	296 016	15	43 38	70 11	Portland	Portland East
Ram Island	55 605	297 101	<4	43 44	69 59	Harpswell	Bailey Island
Ram Island (a)	81 011	296 036	15	43 33	70 16	Cape Eliz.	Prouts Neck
Rogue Island	55 150	297 066	5	43 46	69 54	Harpswell	Orrs Island
Rogues Island	55 441	296 029	<4	43 42	70 07	Cumberland	S. Harpswell
Sand Island	55 425	296 027	3	43 43	70 06	Cumberland	S. Harpswell
Sister Island (a)	55 238	296 002	<4	43 49	70 03	Freeport	Freeport
Sister Island Ledge	55 237	296 001	<4	43 49	70 02	Freeport	Freeport
Stockman Island (a)	55 401	296 018	18	43 44	70 05	Cumberland	S. Harpswell
Turnip Island (a)	55 427	296 025	<4	43 43	70 01	Harpswell	S. Harpswell
Two Bush Island	55 178	297 072	<4	43 45	69 56	Harpswell	Orrs Island
Upper Flag Island	55 415	296 024	35	43 43	70 03	Harpswell	S. Harpswell
Upper Goose Island (c)	55 251	296 003	108	43 48	70 02	Harpswell	Freeport
Upper Green Island (a)	55 275	296 008	<4	43 46	70 05	Cumberland	Freeport
Upper Green Island	55 297	296 009	<4	43 46	70 05	Cumberland	Freeport
Vaill Island	55 369	296 013	19	43 40	70 10	Portland	Portland East
W. Brown Cow Island (a)	55 458	296 032	<4	43 42	70 04	Cumberland	S. Harpswell
Whale Rock	55 445	296 035	<4	43 42	70 02	Harpswell	S. Harpswell
White Bull Island (a)	55 628	297 105	5	43 43	69 55	Harpswell	Bailey Island
Cedar Ledge	55 608	297 100	<4	43 45	69 57	Harpswell	Bailey Island

Region 2

Waterbird Nesting Islands	State Island Number (b)	Colony Number	Size (Acres)	Lat. N.		Long W.		Town	Quad.
Cat Ledge	65 453	297 079	< 4	43	48	69	41	Southport	Boothbay Har
Cedarbush Island	65 445	297 078	< 4	43	49	69	41	Southport	Boothbay Har
Damariscove Island (a)	65 280	297 089	260	43	46	69	37	Boothbay	Pemaquid Pt.
Ellingwood Rock	73 319	297 113	< 4	43	43	69	46	Georgetown	Small Point
Fisherman Island	65 274	297 084	65	43	48	69	36	Boothbay	Pemaquid Pt.
Gooseberry Island	73 112	297 112	< 4	43	43	69	51	Phippsburg	Small Point
Heron Island (a)	73 315	297 111	< 4	43	43	69	48	Phippsburg	Small Point
Middle Mark Island	73 234	297 077	< 4	43	44	69	42	Georgetown	Boothbay Har
No. Sugarloaf Island (a)	73 213	297 075	< 4	43	45	69	46	Phippsburg	Phippsburg
Outer Heron Island (c)	65 279	297 088	75	43	46	69	35	Boothbay	Pemaquid Pt.
Pond Island (a)	73 282	297 109	12	43	44	69	46	Phippsburg	Small Point
Pumpkin Island (a)	65 287	297 090	8	43	45	69	35	Boothbay	Pemaquid Pt.
Salter Island	73 215	297 076	45	43	44	69	45	Georgetown	Phippsburg
Seguin Island (a)	73 320	297 114	65	43	42	69	45	Georgetown	Small Point
So. Sugarloaf Island	73 280	297 107	< 4	43	45	69	46	Phippsburg	Small Point
Sprague River Beach	73 xxx	297 108	< 4	43	44	69	49	Phippsburg	Small Point
The Cuckolds Island	65 466	297 080	< 4	43	47	69	39	Southport	Boothbay Har
The Hypocrites	65 272	297 085	< 4	43	48	69	35	Boothbay	Pemaquid Pt.
White Island (outer) (a)	65 278	297 087	13	43	47	69	35	Boothbay	Pemaquid Pt.
White Island (Inner) (a)	65 276	297 086	20	43	48	69	35	Boothbay	Pemaquid Pt.
Wood Island	73 283	297 110	10	43	44	69	47	Phippsburg	Small Point

Region 3

Waterbird Nesting Islands	State Island Number (b)	Colony Number	Size (Acres)	Lat. N.		Long W.		Town	Quad.
Allen Island	63 840	297 034	420	43	52	69	19	St. George	Friendship
Bar Island (a)	63 802	297 023	7	43	55	69	17	St. George	Friendship
Barter Island	63 807	297 026	45	43	54	69	18	St. George	Friendship
Black Island	63 700	297 005	15	43	56	69	22	Friendship	Louds Island
Burnt Island	63 880	297 093	250	43	52	69	17	St. George	Monhegan
Cranberry Island	63 765	297 020	< 4	43	56	69	22	Friendship	Friendship
Crane Island	63 705	297 009	11	43	54	69	23	Friendship	Louds Island
Duck Rocks	63 310	297 097	< 4	43	47	69	19	Monhegan Plt	Monhegan
Eagle Island	63 795	297 021	< 4	43	56	69	18	St. George	Friendship
Eastern Duck Rock (a)	65 313	297 096	< 4	43	47	69	19	Monhegan Plt	Monhegan
Eastern Egg Rock	63 860	297 092	9	43	52	69	23	St. George	New Harbor
Franklin Island (a)	63 707	297 012	10	43	53	69	22	Friendship	Louds Island
Garden Island (a)	63 420	268 097	< 4	44	01	69	07	S. Thomaston	Rockland
Gull Rock	63 724	297 018	< 4	43	57	69	22	Friendship	Friendship
Gunning Rocks (a)	63 836	297 027	< 4	43	55	69	15	St. George	Friendship
Haddock Island	65 200	297 011	13	43	52	69	26	Bristol	Louds Island
Harbor Island	63 701	297 007	90	43	54	69	23	Friendship	Louds Island
Hart Island (a)	63 833	297 028	10	43	54	69	26	St. George	Friendship
Hay Ledge (a)	79 624	297 039	< 4	43	55	69	14	St. George	Tenants Har
Hog Island (a)	63 588	297 042	9	43	52	69	07	Unorganized	Tenants Har
Inner Duck Rock	65 316	297 098	< 4	43	46	69	19	Monhegan Plt	Monhegan
Jims Island	65 179	297 001	5	43	57	69	24	Bremen	Louds Island
Jones Garden Island	65 188	297 003	< 4	43	56	69	23	S. Bristol	Louds Island
Killick Stone (a)	65 189	297 004	6	43	56	69	25	S. Bristol	Louds Island
Little Egg Rock (a)	63 873	297 094	< 4	43	51	69	20	St. George	Monhegan
Little Franklin Ledge	63 708	297 013	< 4	43	53	69	22	Friendship	Louds Island
Little Hall Island	63 704	297 008	< 4	43	54	69	22	Friendship	Louds Island
Little Hog Island	63 587	297 043	< 4	43	52	69	07	Unorganized	Tenants Har
Little Island	63 770	297 019	< 4	43	56	69	21	Friendship	Friendship
Long Ledge	63 774	297 029	< 4	43	53	69	22	Friendship	Friendship

Region 3 (cont'd)

Waterbird Nesting Islands	State Island Number (b)	Colony Number	Size (Acres)	Lat N.	Long W.	Town	Quad.
McGee Island	63 805	297 025	100	43 55	69 18	St. George	Friendship
Metinic Green Island (a)	63 585	297 044	7	43 52	69 08	Unorganized	Tenants Harbor
Metinic Island (a)	63 584	297 040	300	43 53	69 07	Unorganized	Tenants Harbor
New Harbor Dry Ledge	65 301	297 091	<4	43 52	69 29	S. Bristol	New Harbor
Nubbins Island	63 725	297 015	<4	43 58	69 21	Friendship	Friendship
Old Hump Ledges	63 838	297 032	<4	43 52	69 21	St. George	Friendship
Old Hump Ledges	63 839	297 033	<4	43 52	69 21	St. George	Friendship
Ram Island	63 731	297 017	<4	43 58	69 21	Friendship	Friendship
Ross Island	65 198	297 010	20	43 54	69 26	S. Bristol	Louds Island
Sand Island (a)	63 730	297 016	<4	43 58	69 21	Friendship	Friendship
Seal Island	63 637	297 047	<4	43 59	69 07	St. George	Hewetts Island
Shag Ledge East	63 820	297 030	<4	43 53	69 18	St. George	Friendship
Shag Ledge West	63 821	297 031	<4	43 53	69 18	St. George	Friendship
Shark Island (a)	63 875	297 095	<4	43 51	69 21	St. George	Monhegan
Smuttynose Island	65 314	297 099	<4	43 46	69 19	Monhegan Plt	Monhegan
Stone Island	63 798	297 022	17	43 56	69 18	St. George	Friendship
The Brothers (a)	63 579	297 035	5	43 55	69 14	St. George	Tenants Harbor
The Brothers (a)	63 580	297 036	<4	43 55	69 14	St. George	Tenants Harbor
The Brothers (a)	63 581	297 037	5	43 55	69 14	St. George	Tenants Harbor
The Nubble	63 586	297 041	<4	43 52	69 07	Unorganized	Tenants Harbor
Thief Island	65 186	297 002	7	43 56	69 25	S. Bristol	Louds Island
Thread of Life Rock	65 258	297 081	<4	43 50	69 33	S. Bristol	Pemaquid Pt
Thrumcap Island	65 266	297 082	<4	43 49	69 33	S. Bristol	Pemaquid Pt
Thrumcap Island	65 267	297 083	<4	43 49	69 33	S. Bristol	Pemaquid Pt
Tommy Island	63 415	268 095	6	44 01	69 07	S. Thomaston	Rockland
Two Bush Island	63 804	297 024	<4	43 55	69 19	St. George	Friendship
Western Egg Rock (a)	65 201	297 014	8	43 53	69 25	Bristol	Louds Island
Wreck Island (a) (c)	65 194	297 006	15	43 54	69 24	S. Bristol	Louds Island
Yellow Ridge Island (a)	63 640	297 049	<4	43 59	69 07	St. George	Hewetts Island
Gunning Rock (a)	63 578	297 038	<4	43 44	69 15	St. George	Tennants Har

Region 4

Waterbird Nesting Islands	State Island Number (b)	Colony Number	Size (Acres)	Lat N.	Long W.	Town	Quad.
Andrews Island	59 833	268 100	13	44 00	69 03	Unorganized	Rockland
Bald Island (a)	59 803	268 061	13	44 11	68 47	Deer Isle	NE/4 Vinalhaven
Bar Island Ledge	59 718	268 028	<4	44 16	68 43	Deer Isle	SW/4 Blue Hill
Barred Island	59 684	268 018	6	44 16	68 50	Deer Isle	SE/4 Castine
Beach Island	59 687	268 020	75	44 15	68 49	Deer Isle	SE/4 Castine
Big Smith Island Ledge	63 089	268 109	<4	44 05	68 48	Vinalhaven	SE/4 Vinalhaven
Black Horse Island	63 294	268 132	<4	44 02	68 35	Isle au Haut	SE/4 Deer Isle
Brig Ledge	63 934	297 064	<4	43 49	68 53	Matinicus Plt	Matinicus
Brimstone Island (a)	63 176	268 118	38	44 00	68 46	Vinalhaven	SE/4 Vinalhaven
Duck Island	59 672	268 009	<4	44 19	68 47	Brooksville	SE/4 Castine
Carvers Island (a)	63 166	268 113	10	44 01	68 48	Vinalhaven	SE/4 Vinalhaven
Channel Rock	59 792	268 056	<4	44 13	68 49	Deer Isle	NE/4 Vinalhaven
Clam Ledge	63 439	268 089	<4	44 00	69 05	Unorganized	Rockland
Colt Head Island (a)	59 685	268 019	7	44 16	68 50	Deer Isle	SE/4 Castine
Compass Island (a)	59 790	268 055	8	44 13	68 52	Deer Isle	NE/4 Vinalhaven
Cresent Island	63 411	268 094	<4	44 01	69-02	Unorganized	Rockland
Crow Island	63 651	297 050	12	43 58	69 05	Unorganized	Hewetts Island
Cutter's Nubble	63 398	268 099	<4	44 04	69 03	Unorganized	Rockland
Dagger Island	63 015	268 063	6	44 11	68 48	North Haven	NE/4 Vinalhaven
Dagger Ledge	63 014	268 062	<4	44 11	68 48	North Haven	NE/4 Vinalhaven
Deadman Ledge	63 170	268 112	<4	44 01	68 52	Vinalhaven	SE/4 Vinalhaven
Dix Island	63 427	268 098	50	44 01	69 04	Unorganized	Rockland

Region 4 (cont'd)

Waterbird Nesting Islands	State Island Number (b)	Colony Number	Size (Acres)	Lat N.	Long W.	Town	Quad.
Dogfish Island Ledge	63 494	268 102	<4	44 05	68 55	Vinalhaven	SW/4 Vinalhaven
Dumpling Island	63 351	268 048	<4	44 08	68 54	North Haven	NW/4 Vinalhaven
East Goose Rock	63 335	268 043	<4	44 11	68 59	North Haven	NW/4 Vinalhaven
Eaton Island (c)	59 714	268 025	15	44 16	68 44	Deer Isle	SW/4 Blue Hill
Eaton Island Ledge	59 716	268 027	<4	44 16	68 44	Deer Isle	SW/4 Blue Hill
Eaton Island Ledge	59 717	268 026	<4	44 16	68 43	Deer Isle	SW/4 Blue Hill
Egg Rock	63 333	268 042	<4	44 11	68 53	North Haven	NW/4 Vinalhaven
Fiddle Head	59 680	268 016	<4	44 17	68 47	Deer Isle	SE/4 Castine
Fisherman Island (a)	63 402	268 091	10	44 03	69 02	Unorganized	Rockland
Flat Island	63 106	268 110	<4	44 04	68 52	Vinalhaven	SE/4 Vinalhaven
Flat Island (a)	77 047	268 006	<4	44 19	68 56	Isleboro	SW/4 Castine
Fog Island Ledge	63 263	268 124	<4	44 06	68 34	Isle au Haut	SE/4 Deer Isle
Goose Island	63 336	268 044	<4	44 11	68 57	North Haven	NW/4 Vinalhaven
Goose Rock (a)	63 314	268 039	<4	44 11	69 03	Rockport	Camden
Graffam Island (c)	63 634	297 048	160	43 59	69 05	Unorganized	Hewett's Island
Grass Ledge East (a)	59 802	268 060	<4	44 12	68 48	Deer Isle	NE/4 Vinalhaven
Grass Ledge West (a)	59 789	268 054	<4	44 13	68 52	Deer Isle	NE/4 Vinalhaven
Great Spoon Island (a)	63 287	268 129	50	44 02	68 34	Isle au Haut	SE/4 Deer Isle
Green Island	63 485	268 103	<4	44 04	68 55	Vinalhaven	SW/4 Vinalhaven
Green Island Ledge	59 750	268 030	5	44 15	68 30	Brookline	SE/4 Blue Hill
Green Ledge	59 674	268 015	<4	44 17	68 59	Deer Isle	SE/4 Castine
Green Ledge (a)	59 949	268 071	<4	44 11	68 33	Deer Isle	NE/4 Deer Isle
Green Ledge (a)	63 135	268 111	<4	44 03	68 47	Vinalhaven	SE/4 Vinalhaven
Green Ledge (a)	63 493	268 103	<4	44 04	68 55	Vinalhaven	SW/4 Vinalhaven
Green Ledge (a)	63 929	297 062	<4	43 50	68 53	Matinicus Plt	Matinicus
Green Ledge (a)	63 266	268 126	<4	44 05	68 34	Isle au Haut	Deer Isle
Hardhead Island (a)	59 782	268 052	<4	44 13	68 45	Deer Isle	NE/4 Vinalhaven
Hay Island	63 169	268 114	9	44 01	68 47	Vinalhaven	SE/4 Vinalhaven
Hewett Island	63 628	297 045	108	43 59	69 04	Unorganized	Hewett's Island
Horsehead Island	59 770	268 049	18	44 15	68 51	Deer Isle	NE/4 Vinalhaven
Hurricane Island	63 626	297 046	<4	44 01	69 06	Unorganized	Hewett's Island
Hurricane Island Ledge	63 516	268 106	<4	44 02	68 53	Vinalhaven	SW/4 Vinalhaven
Isleboro Island (c)	77 012	268 002	6000	44 19	68 54	Isleboro	NW/4 Castine
John's Island	59 622	268 003	<4	44 25	68 35	Blue Hill	NE/4 Blue Hill
Large Green Island (a)	63 655	297 053	82	43 54	69 01	Unorganized	Hewett's Island
Last Chain Link	59 783	268 051	<4	44 14	68 48	Deer Isle	NE/4 Vinalhaven
Little Brimstone Island(a)	63 179	268 119	<4	44 00	68 46	Vinalhaven	SE/4 Vinalhaven
Little Eaton Island	59 713	268 024	5	44 16	68 44	Deer Isle	SW/4 Blue Hill
Little Green Island(a)	63 654	297 052	35	43 55	69 02	Unorganized	Hewett's Island
Little Hurricane Island	63 518	268 107	10	44 02	68 54	Vinalhaven	SW/4 Vinalhaven
Little Hurricane Is Ledge	63 526	268 106	<4	44 02	68 54	Vinalhaven	SW/4 Vinalhaven
Little Spoon Island (a)	63 289	268 130	25	44 02	68 34	Isle au Haut	SE/4 Deer Isle
Little Spruce Island (a)	59 772	268 050	45	44 14	68 51	Deer Isle	NE/4 Vinalhaven
Mahoney Island (a)	59 933	268 070	9	44 13	68 31	Brooklin	NE/4 Deer Isle
Marblehead Island (a)	63 403	268 092	<4	44 02	69 02	Unorganized	Rockland
Mark Island (c)	63 339	268 045	27	44 10	68 59	North Haven	NW/4 Vinalhaven
Matinicus Rocks (a)	63 940	297 065	18	43 47	68 51	Matinicus Plt	Matinicus
Medric Rock	63 496	268 105	<4	44 04	68 56	Vinalhaven	SW/4 Vinalhaven
Moose Island Ledge	59 830	268 066	<4	44 09	68 41	Unorganized	N /4 Deer Isle
Mouse Island (a)	63 330	268 041	<4	44 12	68 57	Northhaven	NW/4 Vinalhaven
No Man's Island (a)	63 900	297 055	20	43 53	68 52	Matinicus Plt	Matinicus
Oak Island	63 421	268 096	<4	44 01	69 05	Unorganized	Rockland
Otter Island	63 183	268 117	45	44 00	68 48	Vinalhaven	SE/4 Vinalhaven

Region 4 (cont'd)

Waterbird Nesting Islands	State Island Number (b)	Colony Number	Size (Acres)	Lat N.	Long W.	Town	Quad.
Otter Island	63 410	268 093	14	44 01	69 04	Unorganized	Rockland
Pond Island	59 676	268 012	33	44 17	68 48	Deer Isle	SE/4 Castine
Pond Island	59 677	268 013	33	44 17	68 48	Deer Isle	SE/4 Castine
Pudding Island (a)	63 924	297 059	<4	43 50	68 53	Matinicus Plt	Matinicus
Ragged Island (a)	63 930	297 061	325	43 49	68 53	Matinicus Plt	Matinicus
Ram Island	63 323	268 040	<4	44 08	69 04	Rockport	Camden
Resolution Island	59 686	268 021	25	44 15	68 52	Deer Isle	SE/4 Castine
Roberts Island (a)	63 174	268 116	10	44 01	68 48	Vinalhaven	SE/4 Vinalhaven
Roberts Island (a)	63 175	268 115	5	44 01	68 49	Vinalhaven	SE/4 Vinalhaven
Robinson Rock	63 341	268 047	<4	44 10	68 59	North Haven	NW/4 Vinalhaven
Robinson Rock Ledge	63 340	268 046	<4	44 10	68 59	North Haven	NW/4 Vinalhaven
Scott Island (a)	59 709	268 022	5	44 17	68 44	Deer Isle	SW/4 Blue Hill
Scrag Island	59 788	268 053	<4	44 13	68 51	Deer Isle	NE/4 Vinalhaven
Scraggy Island (c)	59 836	268 067	10	44 08	68 42	Stonington	NW/4 Deer Isle
Scraggy Island Ledge	59 837	268 068	<4	44 08	68 42	Stonington	NW/4 Deer Isle
Seal Island (a)	63 923	297 054	100	43 53	68 44	Matinicus Plt	Matinicus
Seal Ledge	63 931	297 063	5	43 50	68 53	Matinicus Plt	Matinicus
Seven Hund. Acre Is (c)	77 054	268 007	862	44 15	68 58	Isleboro	SW/4 Castine
Shabby Island (a)	59 996	268 074	<4	44 10	68 34	Deer Isle	NE/4 Deer Isle
Shag Ledge	63 925	297 060	<4	43 51	68 53	Matinicus Plt	Matinicus
Sheep Island (c)	59 953	268 073	48	44 10	68 36	Stonington	NE/4 Deer Isle
Sheep Island	63 018	268 065	20	44 11	68 48	North Haven	NE/4 Vinalhaven
Sheep Island	63 393	268 090	600	44 04	69 03	Unorganized	Rockland
Sheep Island Ledge	59 711	268 023	<4	44 16	68 43	Deer Isle	SW/4 Blue Hill
Sloop Island	59 795	268 057	5	44 12	68 48	Deer Isle	NE/4 Vinalhaven
Sloop Island Ledge	59 796	268 058	<4	44 12	68 49	Deer Isle	NE/4 Vinalhaven
Smuttynose Island (a)	59 931	268 069	<4	44 13	68 31	Brooklin	NE/4 Deer Isle
S. Popplestone Ledge	63 263	268 125	<4	44 06	68 34	Isle au Haut	SE/4 Deer Isle
S. Mark Island (a)	63 260	268 122	7	44 07	68 34	Isle au Haut	SE/4 Deer Isle
Sparrow Island (a)	63 200	268 120	7	44 07	68 42	Isle au Haut	SW/4 Deer Isle
Spectacle Island (a)	59 673	268 011	9	44 18	68 47	Brooksville	SE/4 Castine
Spectacle Island	59 688	268 010	<4	44 18	68 47	Brooksville	SE/4 Castine
Spoon Ledge (a)	63 011	268 059	<4	44 12	68 50	North Haven	NE/4 Vinalhaven
Sugar Loaves	63 465	268 101	<4	44 07	68 55	North Haven	SW/4 Vinalhaven
Ten Pound Island (a)	63 910	297 058	27	43 51	68 53	Matinicus Plt	Matinicus
The Downfall	63 016	268 064	<4	44 11	68 48	North Haven	NE/4 Vinalhaven
Thrumcap Island (a)	59 669	268 008	<4	44 19	68 45	Brooksville	SE/4 Castine
Torrey Island	59 758	268 029	25	44 15	68 35	Brooklin	SE/4 Blue Hill
Two Bush Island (a)	59 681	268 017	<4	44 17	68 46	Deer Isle	SE/4 Castine
Two Bush Island	63 653	297 051	8	43 58	69 05	Unorganized	Hewetts Island
Two Bush Island	63 901	297 056	5	43 53	68 53	Matinicus Plt	Matinicus
Western Island (a)(c)	59 675	268 014	20	44 17	68 49	Deer Isle	SE/4 Castine
W. Halibut Ledge (a)	63 206	268 121	<4	44 07	68 42	Isle au Haut	SW/4 Deer Isle
White Horse Island	63 293	268 131	<4	44 02	68 34	Isle au Haut	SE/4 Deer Isle
White Ledge	63 267	268 127	<4	44 05	68 34	Isle au Haut	SE/4 Deer Isle
Wooden Ball Island (a)	63 917	297 057	136	43 51	68 49	Matinicus Plt	Matinicus

Region 5

Waterbird Nesting Islands	State Island Number (b)	Colony Number	Size (Acres)	Lat N.	Long W.	Town	Quad.
Bald Rock	59 192	268 005	<4	44 25	68 13	Sorrento	NW/4 Bar Harbor
Bar Island (a)	59 244	268 033	45	44 15	68 27	Tremont	SW/4 Mount Desert
Bean Island	59 190	268 004	25	44 28	68 12	Sorrento	NW/4 Bar Harbor
Brimstone Island	59 479	268 134	<4	44 07	68 28	Swans Isl	NE/4 Swans Island
Burying Island (c)	59 084	268 001	11	44 33	68 16	Franklin	SE/4 Ellsworth
Cherry Ledge	59 356	268 081	<4	44 11	68 26	Swans Isl	NW/4 Swans Island
Crow Island	59 359	268 082	<4	44 11	68 26	Swans Isl	NW/4 Swans Island
Eagle Island	59 349		8	44 13	68 27	Swans Isl	
East Barge Island	59 342	268 080	<4	44 14	68 26	Tremont	NW/4 Swans Island
Eastern Island	79 843	269 021	5	44 24	67 56	Steuben	Petit Manan
Egg Rock	59 950	268 072	<4	44 11	68 30	Swans Isl	NE/4 Deer Isle
Egg Rock (a)	79 935	269 027	<4	44 24	67 52	Milbridge	Bois Bubert
Gooseberry Island	59 398	268 084	<4	44 08	68 27	Swans Isl	NW/4 Swans Island
Goose Cove Rock (a)	59 239	268 034	5	44 15	68 25	Tremont	SW/4 Mount Desert
Great Duck Island (a)	59 440	268 088	220	44 09	68 15	Long I. Plt	NE/4 Swans Island
Green Island (a)	59 446	268 086	6	44 09	68 20	Long I. Plt	NE/4 Swans Island
Green Island	59 478	268 133	9	44 07	68 27	Swans Isl	SW/4 Swans Island
Green Island (a)	79 929	269 028	12	44 22	67 52	Milbridge	Bois Bubert
Green Island Ledge (a)	59 445	268 087	< 4	44 09	68 20	Long I. Plt	NE/4 Swans Island
Halibut Rocks	59 991	268 075	< 4	44 08	68 31	Swans Isl	NE/4 Deer Isle
Hardwood Island (c)	59 236	268 031	200	44 18	68 27	Tremont	SW/4 Mount Desert
Heron Island (a)	59 480	268 136	50	44 06	68 28	Swans Isl	SW/4 Swans Island
Heron Island	59 069	268 036	< 4	44 22	68 06	Winter Har	SE/4 Bar Harbor
High Sheriff Island	59 397	268 083	< 4	44 08	68 28	Swans Isl	NW/4 Swans Island
Johns Island (a)	59 483	268 135	35	44 07	68 24	Swans Isl	SW/4 Swans Island
Jordan's Delight (a)	79 922	269 026	24	44 27	67 49	Milbridge	Bois Bubert
Little Duck Island (a)	59 439	268 085	85	44 10	68 15	Long I. Plt	NE/4 Swans Island
Mason Ledge (a)	59 481	268 137	6	44 06	68 29	Swans Isl	SW/4 Swans Island
Middle Douglas Island (c)	79 918	269 025	21	44 27	67 51	Milbridge	Bois Bubert
Petit Manan Island (a)	79 933	269 029	17	44 22	67 52	Milbridge	Bois Bubert
Pot Rock	79 902	269 023	< 4	44 29	67 45	Harrington	Bois Bubert
Rumell Island	59 238	268 032	< 4	44 16	68 25	Tremont	SW/4 Mount Desert
Saddleback Island (a)	59 999	268 123	< 4	44 06	68 32	Swans Isl	NE/4 Deer Island
Sally Island	59 037	269 022	6	44 24	67 57	Gouldsboro	Petit Manan
Schoodic Island (a)	59 062	268 038	65	44 20	68 02	Winter Har	SE/4 Bar Harbor
Ship Island (a)	59 341	268 078	15	43 14	68 26	Tremont	NW/4 Swans Island
Shipstern Island	79 906	269 024	7	44 28	67 48	Harrington	Bois Bubert
Spirit Ledge (a)	59 001	268 128	< 4	44 05	68 31	Swans Isl	SE/4 Deer Island
The Thrumcap (a)	59 300	268 035	< 4	44 22	68 11	Bar Harbor	SW/4 Bar Harbor
Three Bush Island	59 980	268 076	< 4	44 07	68 31	Swans Isl	NE/4 Deer Isle
Trumpet Island (a)	59 340	268 077	12	43 15	68 27	Tremont	NW/4 Swans Island
Turtle Island (c)	59 065	268 037	< 4	44 21	68 06	Winter Har	SE/4 Bar Harbor
West Barge Island (a)	59 343	268 079	< 4	44 14	68 27	Tremont	NW/4 Swans Island

Region 6

Waterbird Nesting Islands	State Island Number (b)	Colony Number	Size (Acres)	Lat N.	Long W.	Town	Quad.
Ballast Island (a)	79 488	269 007	<4	43 34	67 33	Jonesport	Jonesport
Batson Ledges	79 613	269 036	<4	44 28	67 40	Addison	Drisko Island
Big Nash Island (a)	79 626	269 038	80	44 28	67 44	Addison	Drisko Island
Browney Island (a)	79 693	269 043	37	44 28	67 37	Beals	Great Wass Island

Region 6 (cont'd)

Waterbird Nesting Islands	State Island Number (b)	Colony Number	Size (Acres)	Lat N.	Long W.	Town	Quad.
Curlew Rock	79 697	269 045	< 4	44 26	67 36	Beals	Great Wass Island
Egg Rock	79 605	269 042	< 4	44 26	67 38	Beals	Drisko Island
Flat Island (a)	79 621	269 040	16	44 27	67 42	Addison	Drisko Island
Foster Island	79 551	269 008	46	44 35	67 24	Machiasport	Bogue Bluffs
Freeman Rock	79 676	269 046	< 4	44 28	67 43	Jonesport	Great Wass Island
Goose Island (a)	79 126	269 002	5	44 55	67 02	Eastport	Eastport
Green Island	79 572	269 013	< 4	44 34	67 27	Jonesport	Bogue Bluffs
Green Rock	79 699	269 044	< 4	44 26	67 36	Beals	Great Wass Island
Halifax Island	79 570	269 012	64	44 34	67 27	Jonesport	Bogue Bluffs
Inner Double Hd.Sh.Island	79 351	269 017	10	44 36	67 16	Cutler	Cross Island
Inner Sand Island (a)	79 614	269 037	13	44 28	67 40	Addison	Drisko Island
Libby Island (a)	79 359	269 020	90	44 35	67 21	Machiasport	Cross Island
Little Drisko Island (a)	79 638	269 033	12	44 29	67 40	Beals	Drisko Island
Nash Island	79 627	269 039	18	44 28	67 45	Addison	Drisko Island
Nightcap Island(a)	79 748	269 006	< 4	44 31	67 45	Addison	Harrington
Old Man (a)	79 313	269 004	< 4	44 37	67 14	Cutler	Cutler
Outer Double Head Shot(a)	79 352	269 018	15	44 36	67 16	Cutler	Cross Island
Outer Ram Island (c)	79 602	269 032	8	44 29	67 38	Beals	Drisko Island
Pulpit Rock (a)	79 576	269 016	< 4	44 33	67 28	Jonesport	Bogue Bluffs
Ram Island (a)	79 552	269 010	17	44 34	67 24	Machiasport	Bogue Bluffs
Red Island	79 137	269 003	< 4	44 55	67 05	Perry	Eastport
Scabby Island (a)	79 554	269 011	8	44 34	67 24	Machiasport	Bogue Bluffs
Shag Ledge	79 556	269 009	< 4	44 35	67 25	Machiasport	Bogue Bluffs
Spectacle Island (a)	79 132	269 001	6	44 55	67 02	Eastport	Eastport
Stanley Ledge	79 618	269 041	< 4	44 27	67 40	Addison	Drisko Island
Stevens Island	79 608	269 031	27	44 29	67 40	Addison	Drisko Island
Stevens Island Ledge	79 637	269 030	< 4	44 30	67 40	Addison	Drisko Island
Stone Island (c)	79 356	269 019	58	44 36	67 22	Machiasport	Cross Island
The Brothers Island (a)	79 573	269 014	18	44 33	67 26	Jonesport	Bogue Bluffs
The Ladle (a)	79 632	269 034	< 4	44 29	67 44	Addison	Drisko Island
Tom's Island	79 639	269 035	8	44 29	67 41	Addison	Drisko Island
Upper Birch Island (c)	79 740	269 005	26	44 32	67 46	Addison	Harrington
W. Brothers Island	79 586	269 015	9	44 33	67 26	Jonesport	Bogue Bluffs

(a) Important Seabird Nesting Islands (1% Criteria)

(b) Island Numbers and Names Designated by the Coastal Island Registry Program, Maine Bureau of Public Lands

(c) Island on which heron nesting colonies are found

Appendix Table 2 Important Known Shorebird Roosting and Feeding Locations in Coastal Maine (see atlas map 4).

Location	Lat.	Long.	Species
Region 1 - Roosting Locations			
Long Creek, South Portland	43°38'	70°18'	Black-bellied plover, yellowlegs, short-billed dowitcher
Willard School, Portland	43°39'	70°19'	Black-bellied plover, semipalmated sandpiper
Back Cove, Portland	43°40'	70°15'	Semipalmated plover, black-bellied plover, ruddy turnstone, yellowlegs, least sandpiper, dunlin, short-billed dowitcher, semipalmated sandpiper
Prescumpscot River Flats, Falmouth	43° 43'	70°15'	Semipalmated plover, semipalmated sandpiper
Maquoit Bay, Brunswick	43°53'	69°59'	Semipalmated plover, black-bellied plover, yellowlegs, dunlin
Middle Bay in Pennellville, Brunswick	43°51'	69°58'	Semipalmated plover, black-bellied plover
Region 1 - Feeding Locations			
Spurwick River, Cape Elizabeth	43°35'	70°17'	Peeps, sanderling
Crescent Beach, Cape Elizabeth	43°33'	70°13'	Medium sized shorebirds
Fore River, Portland/S.Portland	43°38'	70°18'	Black-bellied plover, yellowlegs, short-billed dowitcher semipalmated sandpiper
Back Cove, Portland	43°40'	70°15'	Semipalmated plover, black-bellied plover, ruddy turnstone, yellowlegs, least sandpiper, dunlin, short-billed dowitcher, semipalmated sandpiper
Prescumpscot River Flats, Falmouth	43°43'	70°15'	Semipalmated plover, semipalmated sandpiper
Brothers Island, Falmouth	43°42'	70°14'	Black-bellied plover
Royal River, N. Yarmouth	43°47'	70°10'	Semipalmated plover

Appendix Table 2 Continued.

Location	Lat.	Long.	Species
Harraseeket River, Freeport	43°50'	70°06'	Peeps
Maquoit Bay, Brunswick	43°52'	69°59'	Semipalmated plover, black-bellied plover,yellowlegs. dunlin
Harpswell Cove, Brunswick	43°51'	69°56'	Whimbrel
Middle Bay, Brunswick	43°51'	69°57'	Semipalmated plover, black-bellied plover, peeps
St. Thomas Beach, Brunswick	43°53'	69°48'	Semipalmated plover
Region 2 - Roosting Locations			
Hermit Island, Phippsburg	43°43'	69°51'	Semipalmated plover
Sprague River Bar, Phippsburg	43°43'	69°49'	Piping plover, semipalmated plover, black-bellied plover, red knot,least sandpiper, semipalmated sandpiper, sanderling
Morse River Bar, Phippsburg	43°44'	69°47'	Semipalmated plover, black-bellied plover, least sandpiper, semipalmated sandpiper, sanderling
Winnigance Creek, Bath	43°52'	69°50'	Least sandpiper, semipalmated sandpiper
Eastern River Breakwater,Dresden	44°03'	69°47'	Semipalmated sandpiper
Region 2 - Feeding Locations			
New Meadows River, W. Bath	43°55'	69°47'	Semipalmated plover, yellowlegs, least sandpiper, semipalmated sandpiper
Hermit Island	43°43'	69°51'	Semipalmated plover, purple sandpipers
Sprague River Beach,Phippsburg	43°43'	69°49'	Piping plover, semipalmated plover, black-bellied plover, red knot, least sandpiper, semipalmated sandpiper, sanderling
Popham Beach/Atkins Bay, Phippsburg	43°44'	69°47'	Semipalmated plover, semipalmated sandpiper, sanderling, medium sized shorebirds, black-bellied plover
Spirit Pond, Phippsburg	43°45'	69°48'	Yellowlegs
Wyman Bay Flats & Drummore Bay Flats (Kennebec River), Phippsburg	43°50'	69°49'	Semipalmated sandpiper
Winnigance Creek, Bath	43°52'	69°50'	Least sandpiper, semipalmated sandpiper

Appendix Table 2   Continued.

Location	Lat.	Long.	Species
Swan Island/Little Swan Island Flats, Dresden	43°03'	69°47'	Semipalmated sandpiper
Reid State Park, Georgetown	43°47'	69°44'	Semipalmated plover, black-bellied plover, sanderling, purple sandpipers, medium sized shorebirds
Sasonoa River (unspecified location)	-	-	Whimbrel
Region 3 - Roosting Locations			
Thomaston Wharf, Thomaston	44°04'	69°11'	Semipalmated plover, black-bellied plover, semipalmated sandpiper, sanderling
Mosquito Harbor, St. George	43°57'	69°14'	Semipalmated plover, black-bellied plover, short-billed dowitcher
Weskeag Marsh, S. Thomaston	44°04'	68°08'	Yellowlegs, least sandpiper, short-billed dowitcher, semipalmated sandpiper
Region 3 - Feeding Locations			
Christmas Cove, S. Bristol	43°51'	69°33'	Whimbrel
Pemaquid Point, Pemaquid	43°50'	69°31'	Purple sandpiper
Dry Ledges, New Harbor	43°52'	69°29'	Purple sandpiper
Eastern Egg Rock, St. George	43°52'	69°23'	Ruddy turnstone
Medomak River, Waldoboro (unspecified location)			Semipalmated plover, semipalmated sandpiper
Meduncook River, Friendship	44°59'	69°19'	Semipalmated plover
South Cushing, Cushing	43°59'	69°17'	Whimbrel
Lower St. George River Flats, Cushing	44°01'	69°14'	Semipalmated plover, semipalmated sandpiper
Clark Island Ledges, St. George	43°49'	69°11'	Purple sandpiper

Appendix Table 2 Continued.

Location	Lat.	Long.	Species
Upper St. George River Flats, Thomaston	44°04'	69°11'	Semipalmated plover, black-bellied plover, semipalmated sandpiper, sanderling, pectoral sandpiper
Mosquito Island, St. George	43°55'	69°13'	Black-bellied plover, ruddy turnstone
Mosquito Harbor, St. George	43°57'	69°14'	Black-bellied plover, yellowlegs, short-billed dowitcher
Spruce Head, St. George	44°01'	69°07'	Short-billed dowitcher, semipalmated sandpiper, purple sandpiper
Weskeag River Salt Marshes, S. Thomaston	44°04'	68°08'	Yellowlegs, least sandpiper, short-billed dowitcher, semipalmated plover
Region 4 - Roosting Locations			
Rockland Harbor, Rockland	44°07'	69°05'	Semipalmated plover, semipalmated sandpiper
Lincolnville Beach, Lincolnville	44°17'	69°01'	Semipalmated plover, purple sandpiper
Little Deer Isle/Deer Isle Causeway, Deer Isle	44°18'	68°42'	Medium sized shorebirds
Region 4 - Feeding Locations			
Little Green Island, Unorganized Township	43°55'	69°02'	Short-billed dowitcher
Large Green Island, Unorganized Township	43°54'	69°01'	Purple sandpiper
Rockland Harbor, Rockland	44°07'	69°05'	Semipalmated plover, short-billed dowitcher, semipalmated sandpiper
Lincolnville Beach, Lincolnville	44°17'	69°01'	Semipalmated plover, purple sandpiper
Lane Island, Vinalhaven	44°03'	68°47'	Purple sandpiper
Ledges off Combs Neck, Vinalhaven	44°06'	68°46'	Purple sandpiper

Appendix Table 2 Continued.

Location	Lat.	Long.	Species
Penobscot River, Winterport	44°37'	68°51'	Semipalmated plover
Bagaduce River Flats	44°27'	68°43'	Semipalmated sandpiper, semipalmated plover, black-bellied plover
Little Deer Isle/Deer Isle Causeway, Deer Isle	44°18'	68°42'	Medium sized shorebirds
Pressey Cove, Deer Isle	44°14'	68°44'	Medium sized shorebirds
Oak Point Flats, Deer Isle	44°13'	68°37'	Yellowlegs, medium sized shorebirds
Dow Ledges, Deer Isle	44°09'	68°39'	Purple sandpiper
Benjamin River, Sedgewick	44°18'	68°37'	Purple sandpiper
Region 5 - Roosting Locations			
Bar Island, Bar Harbor	44°24'	68°13'	Ruddy turnstone
Upper End of Jordan River, Trenton	44°29'	68°22'	Semipalmated plover, semipalmated sandpiper
Marlboro Beach, Lamoine	44°28'	68°17'	Semipalmated plover, semipalmated sandpiper
Meadow Point, Lamoine	44°28'	68°17'	Semipalmated plover, semipalmated sandpiper
Grand Marsh Bay, Gouldsboro	44°27'	68°01'	Yellowlegs, least sandpiper, short-billed dowitcher, semipalmated sandpiper
Pinkham Bay, Steuben	44°29'	67°55'	Semipalmated plover, black-bellied plover, short-billed dowitcher, semipalmated sandpiper
Pinkham Island, Milbridge	44°33'	67°50'	Semipalmated sandpiper
Mill River/Cole Creek, Milbridge/Harrington	44°34'	67°50'	Semipalmated plover, yellowlegs, short-billed dowitcher, semipalmated sandpiper, black-bellied plover
Curtis Creek, Harrington	44°35'	67°48'	Semipalmated plover, yellowlegs, short-billed dowitcher, semipalmated sandpiper
Five Islands, Harrington	44°34'	67°48'	Black-bellied plover, short-billed dowitcher
Chamberly Island, Milbridge	43° 34'	67°49'	Semipalmated plover, semipalmated sandpiper

Appendix Table 2   Continued.

Location	Lat.	Long.	Species
West Carrying Place Cove, Harrington	44°33'	67°48'	Semipalmated plover, black-bellied plover, short-billed dowitcher
Half tide Ledge & Dry Ledge, Harrington	44°31'	67°49'	Semipalmated plover, semipalmated sandpiper
East Carrying Place Cove (Wards Cove), Harrington	44°33'	67°46'	Semipalmated plover, semipalmated sandpiper
Region 5 - Feeding Locations			
Thunder Hole, Bar Harbor	44°19'	68°11'	Purple sandpiper
Old Soaker, Bar Harbor	44°19'	68°11'	Purple sandpiper
Bar Harbor Bar, Bar Harbor	44°24'	68°13'	Black-bellied plover, ruddy turnstone, red knot, purple sandpiper
Indian Point, Bar Harbor	44°23'	68°22'	Semipalmated plover
Goose Cove, Trenton	44°26'	68°23'	Semipalmated plover, semipalmated sandpiper
Trenton Bay, Trenton	44°27'	68°22'	Semipalmated plover, semipalmated sandpiper
Jordan River, Trenton	44°29'	68°21'	Semipalmated plover, semipalmated sandpiper
Lamoine Beach, Lamoine	44°27'	68°18'	Semipalmated plover, least sandpiper, semipalmated sandpiper, sanderling, black-bellied plover
Raccoon Cove, Lamoine	44°28'	68°17'	Semipalmated plover, ruddy turnstone, semipalmated sandpiper
Outer Skillings River, Lamoine	44°29'	68°16'	Semipalmated sandpiper
Inner Skillings River (Kilkenny Cove) Sullivan	44°32'	68°19'	Black-bellied plover
Long Cove, Sorrento	44°31'	68°11'	Black-bellied plover
Ingalls Island, Sorrento	44°29'	68°13'	Purple sandpiper
Mt. Desert Rock, Long Island Plantation	43°58'	68°07'	Northern phalarope

Appendix Table 2   Continued.

Location	Lat.	Long.	Species
Schoodic Point, Winter Harbor	44°21'	68°03'	Purple sandpiper
Prospect Harbor, Gouldsboro	44°24'	68°01'	Purple sandpiper
Corea, Gouldsboro	44°24'	67°58'	Purple sandpiper
Grand Marsh Bay, Gouldsboro	44°27'	68°01'	Semipalmated plover, yellowlegs, least sandpiper, short-billed dowitcher, semipalmated sandpiper
Steuben Harbor, Steuben	44°31'	67°59'	Semipalmated plover, yellowlegs, red knot, short-billed dowitcher, semipalmated sandpiper
Dyer Harbor, Steuben	44°28'	67°56'	Semipalmated plover, black-bellied plover, yellowlegs
Pinkham Bay, Steuben	44°29'	67°55'	Semipalmated plover, black-bellied plover, yellowlegs red knot
Pigeon Hill Bay, Steuben	44°29'	67°53'	Semipalmated plover, black-bellied plover, yellowlegs, semipalmated sandpiper
Pinkham Straights, Steuben	44°27'	67°53'	Semipalmated plover, black-bellied plover
Petit Manan Point, Steuben	44°23'	67°54'	Semipalmated plover, whimbrel, red knot
Petit Manan Island, Steuben	44°22'	67°52'	Short-billed dowitcher
Narraguagus Bay, Milbridge	44°32'	67°53'	Semipalmated plover, short-billed dowitcher, semipalmated sandpiper
Back Bay, Milbridge	44°33'	67°51'	Semipalmated plover, short-billed dowitcher, semipalmated sandpiper, black-bellied plover
Mill River, Milbridge/Harrington	44°34'	67°50'	Semipalmated plover, yellowlegs, short-billed dowitcher, semipalmated sandpiper, black-bellied plover
Flat Bay, Harrington	44°35'	67°50'	Semipalmated plover, yellowlegs, short-billed dowitcher, semipalmated sandpiper, black-bellied plover
Upper Harrington River, Harrington	44°35'	67°48'	Semipalmated plover, yellowlegs, semipalmated sandpiper
Lower Harrington River, Harrington	44°33'	67°48'	Semipalmated plover, black-bellied plover, yellowlegs, short-billed dowitcher, semipalmated sandpiper, dunlin, purple sandpiper

Appendix Table 2 Continued.

Location	Lat.	Long.	Species
Upper and Lower Wass Cove, Harrington	44°35'	67°45'	Semipalmated plover, dunlin, semipalmated sandpiper
East Carrying Place Cove (Wards Cove), Harrington	44°33'	67°46'	Semipalmated plover, semipalmated sandpiper, purple sandpiper
Region 6 - Roosting Locations			
Addison Marsh, (two areas), Addison	44°37'	67°45'	Yellowlegs, least sandpiper, short-billed dowitcher, semipalmated sandpiper, black-bellied plover
Batson's Field, Addison	44°35'	67°44'	Semipalmated plover, black-bellied plover, least sandpiper, semipalmated sandpiper
Reef Point, Addison	44°34'	67°45'	Semipalmated sandpiper
Duck Ledges, Addison	44°30'	67°40'	Semipalmated sandpiper
Steven's Island, Addison	44°29'	67°40'	Semipalmated sandpiper
Norton Island, Addison	44°30'	67°45'	Semipalmated sandpiper, semipalmated plover
Alley's Bay, Beals	44°31'	67°36'	Semipalmated plover, black-bellied plover, semipalmated sandpiper
Head Harbor Island, Jonesport	44°31'	67°32'	Short-billed dowitcher, peeps
Ballast Island, Jonesport	44°34'	67°33'	Peeps
Roque Island, Jonesport	44°35'	67°31'	Peeps
Flake Point Bar, Jonesport	44°37'	67°34'	Peeps
Roque Bluffs Beach, Roque Bluffs	44°37'	67°29'	Peeps
Mill Creek, Machiasport	44°43'	67°24'	Semipalmated plover, semipalmated sandpiper
Fort O'Brian State Park, Machiasport	44°41'	67°24'	Semipalmated plover, semipalmated sandpiper
Shipyard Cove, E. Machias	44°44'	67°23'	Short-billed dowitcher, semipalmated sandpiper
Randall Point, Machiasport	44°42'	67°22'	Semipalmated plover, semipalmated sandpiper
Holmes Bay, Whiting	44°43'	67°19'	Semipalmated plover, semipalmated sandpiper
Holmes Creek, Whiting	44°43'	67°18'	Semipalmated plover, black-bellied plover, yellowlegs, short-billed dowitcher, semipalmated sandpiper

Appendix Table 2 Continued.

Location	Lat.	Long.	Species
Huntley Creek, Cutler	44°43'	67°18'	Black-bellied plover, yellowlegs
Hog Island, Bucks Harbor	44°40'	67°20'	Semipalmated sandpiper
Sprague Neck Bar, Cutler	44°40'	67°19'	Semipalmated plover, black-bellied plover, ruddy turnstone, yellowlegs, red knot, white-rumped sandpiper, short-billed dowitcher, semipalmated sandpiper
Little Machias Bay, Cutler	44°40'	67°15'	Black-bellied plover, ruddy turnstone, whimbrel
Gravel/Cobble Bar, S. Lubec	44°49'	66°59'	Semipalmated plover, black-bellied plover, ruddy turnstone, red knot, white-rumped sandpiper, semipalmated sandpiper, purple sandpiper, whimbrel
Barrier Beach, S. Lubec	44°49'	66°59'	Semipalmated plover, black-bellied plover, least sandpiper, semipalmated sandpiper
Orange Nun #43, S. Lubec	44°50'	66°59'	Semipalmated plover, semipalmated sandpiper
Woodward Point, S. Lubec	44°50'	67°59'	Semipalmated plover, semipalmated sandpiper
Lubec Neck (near Medical Center), Lubec	44°51'	67°00'	Semipalmated plover, red knot, semipalmated sandpiper, sanderling
Mowry Point (Lubec Narrows), Lubec	44°51'	66°59'	Semipalmated plover, semipalmated sandpiper, sanderling
Federal Harbor, Lubec	44°52'	67°05'	Medium sized shorebirds, (black-bellied plover, golden plover)
Carrying Place Cove, Eastport	44°55'	67°01'	Peeps
Mathews Point, Eastport	44°55'	67°02'	Semipalmated plover, semipalmated sandpiper
Spectacle Island, Eastport	44°55'	67°02'	Peeps
Johnson's Cove, Eastport	44°56'	67°01'	Semipalmated plover, semipalmated sandpiper
Carlow Island (West Side), Eastport	44°56'	67°02'	Semipalmated sandpiper
Carlow Island (East Side), Eastport	44°56'	67°02'	Semipalmated sandpiper
Pleasant Point Causeway (N), Perry	44°57'	67°03'	Semipalmated sandpiper
Pleasant Point Causeway (S), Eastport	44°57'	67°03'	Semipalmated sandpiper

Appendix Table 2 Continued.

Location	Lat.	Long.	Species
Pleasant Point (near baseball field), Perry	44°57'	67°04'	Semipalmated plover, semipalmated sandpiper
Gleason Cove Bar, Perry	44°58'	67°03'	Semipalmated plover, semipalmated sandpiper
Small Pond (Perry Pond) at Gleason Cove, Perry	44°58'	67°03'	Peeps, medium sized shorebirds
Region 6 - Feeding Locations			
Addison Marsh, Addison	44°37'	67°45'	Semipalmated plover, yellowlegs, least sandpiper, short-billed dowitcher, semipalmated sandpiper
Dyer Cove, Addison	44°36'	67°45'	Semipalmated plover, yellowlegs, short-billed dowitcher, semipalmated sandpiper
Long Cove, Addison	44°34'	67°45'	Semipalmated plover, yellowlegs, short-billed dowitcher, semipalmated sandpiper, black-bellied plover
Pleasant River Flats, Addison (Opposite Whites Point)	44°36'	67°44'	Semipalmated plover, semipalmated sandpiper, black-bellied plover
Cape Split, Addison	44°30'	67°43'	Short-billed dowitcher, semipalmated sandpiper, purple sandpiper
Wahoo Bay, Jonesport	44°32'	67°41'	Semipalmated plovers, semipalmated sandpipers, purple sandpiper
West River, Jonesport	44°34'	67°40'	Semipalmated plovers, semipalmated sandpipers, purple sandpiper
Indian River/Hay Creek, Jonesport	44°33'	67°39'	Semipalmated plovers, semipalmated sandpipers, purple sandpiper
Alley's Bay, Beals	44°31'	67°36'	Semipalmated sandpiper, semipalmated plover,black-bellied plover
Head Harbor Island	44°31'	67°33'	Whimbrel, purple sandpiper, short-billed dowitcher
Great Wass Island, Beals	44°30'	67°35'	Whimbrel, purple sandpiper
Bar Island, Jonesport	44°34'	67°34'	Whimbrel, purple sandpiper
Roque Island, Jonesport	44°34'	67°32'	Peeps

Appendix Table 2 Continued.

Location	Lat.	Long.	Species
Great Bar, Jonesport	44°37'	67°33'	Semipalmated sandpiper, purple sandpiper, whimbrel, medium sized shorebirds
Mason's Bay, Jonesport	44°37'	67°35'	Semipalmated sandpiper, semipalmated plovers, whimbrel
Chandler River, Jonesboro	44°39'	67°34'	Semipalmated sandpiper
Sanford Cove, Roque Bluffs	44°38'	67°33'	Semipalmated plover, black-bellied plover, semipalmated sandpiper, purple sandpiper
Round Cove, Roque Bluffs	44°36'	67°27'	Black-bellied plovers, purple sandpiper
Little Kennebec River, Roque Bluffs	44°40'	67°26'	Semipalmated sandpiper
Sandborn Cove, Machiasport	44°41'	67°24'	Semipalmated plover, black-bellied plover, semipalmated sandpiper
Larrabee Cove, Machiasport	44°40'	67°23'	Semipalmated plover, semipalmated sandpiper
Machias River, Machias	44°43'	67°27'	Semipalmated plover, short-billed dowitcher,semipalmated sandpiper
East Machias River, E. Machias	44°43'	67°24'	Semipalmated plover, short-billed dowitcher,semipalmated sandpiper
Randall Point Flats, Machiasport	44°42'	67°22'	Semipalmated plover, short-billed dowitcher, semipalmated sandpiper, black-bellied plover
Holmes Bay, Whiting	44°43'	67°18'	Semipalmated plover, black-bellied plover, yellowlegs, least sandpiper, dunlin, short-billed dowitcher, semipalmated sandpiper, purple sandpiper
Sprague Neck Flats, Cutler	44°40'	67°19'	Semipalmated plover, black-bellied plover, yellowlegs, short-billed dowitcher, semipalmated sandpiper, ruddy turnstone, red knot, white-rumped sandpiper
Marine waters near Machias Seal Island, N.B.	44°30'	67°08'	Northern phalarope
Little Machias Bay, Cutler	44°40'	67°15'	Semipalmated plovers, black-bellied plover, ruddy turnstone, whimbrels, yellowlegs, red knot, white-rumped sandpiper, semipalmated sandpiper, purple sandpiper
South Lubec Flats, S. Lubec	44°50'	66°59'	Semipalmated plover, black-bellied plover, ruddy turnstone, whimbrel, yellowlegs, red knot, white-rumped sandpipers, least sandpiper, dunlin, semipalmated sandpiper, sanderling, purple sandpiper

Appendix Table 2 Continued.

Location	Lat.	Long.	Species
Quoddy Head, Lubec	44°49'	66°57'	Purple sandpiper
Broad Cove, Eastport	44°54'	67°00'	Semipalmated plover, black-bellied plover, semipalmated sandpiper
Carrying Place Cove, Eastport	44°55'	67°02'	Semipalmated plover, semipalmated sandpiper
Half-Moon Cove, Eastport	44°56'	67°02'	Semipalmated plover, semipalmated sandpiper
Half-Moon Cove, Perry	44°57'	67°03'	Semipalmated plover, semipalmated sandpiper
Western Passage, Eastport	44°57'	67°01'	Northern phalarope
Eastport/Deer Island, New Brunswick	44°56'	67°58'	Northern phalarope

CHAPTER 16

Table 1. Relative Abundance, Feeding Methods, Food Types, and Preferred Habitats of Permanent Resident Terrestrial Birds in Coastal Maine.

Common name	Species name	Relative abundance by region: Breeding 1-3	Breeding 4-5	Breeding 6	Wintering 1-3	Wintering 4-5	Wintering 6	Migration 1-6	Foraging strata	Foraging method	Primary foods
Goshawk	*Accipiter gentilis*	O	UC	UC	UC	UC	UC	UN	AG	R	V
Sharp-shinned hawk	*Accipiter striatus*	O	UC	UC	UC	UC	UC	VC	AG	R	V
Red-tailed hawk	*Buteo jamaicensis*	O	UC	UC	UC	UC	UC	C	AG	R	V
Kestrel	*Falco sparverius*	C	C	C	UC	UC	R	VC	AG	R	IV
Spruce grouse	*Canachites canadensis*	-	UC	C	-	UC	C	-	GSL	E	OF
Bald eagle	*Haliaeetus leucocephalus*	O	UC	UC	UC	C	C	UC	AG	R	V
Ruffed grouse	*Bonasa umbellus*	C	C	C	C	C	C	-	GSLC	E	OF
Ring-necked pheasant	*Phasianus colchicus*	O	O	O	O	O	O	-	G	E	O
Rock dove	*Columba livia*	VC	VC	VC	VC	VC	VC	-	G	E	O
Mourning dove	*Zenaidura macroura*	VC	VC	VC	UC	UC	UC	C	G	E	O
Great horned owl	*Bubo virginianus*	UC	UC	UC	UC	UC	UC	-	AG	R	V
Barred owl	*Strix varia*	C	C	C	C	C	C	-	AG	R	V
Saw-whet owl	*Aegolius acadicus*	UC	UC	UC	UC	UC	UC	UC	AG	R	V
Pileated woodpecker	*Dryocopus pileatus*	UC	UC	UC	UC	UC	UC	-	B	P	I
Hairy woodpecker	*Picoides villosus*	C	C	C	C	C	C	-	B	P	I
Downy woodpecker	*Picoides pubescens*	C	C	U	C	C	C	IR	B	P	I
Black-backed three-toed woodpecker	*Picoides arcticus*	R	O	UC	O	UC	UC	IR	B	P	I
Northern three-toed woodpecker	*Picoides tridactylus*	-	R	R	R	R	R	I	B	P	I
Horned lark	*Eremophila alpestris*	O	O	O	O	O	O	C	G	E	O
Blue jay	*Cyanocitta cristata*	VC	VC	VC	VC	VC	VC	C	GLC	G	O

Relative Abundance: R = rare, O = occasional, UC = uncommon, C = common, VC = very common, UN = status unknown,
I = irregular (not present every year), used to modify relative abundance terms.

Foraging Strata: A = aerial (continuous flying), S = shrub, L = low canopy, G = ground, B = bark, C = high canopy.

Foraging Method: G = foliage gleaner, P = prober, F = flycatcher, E = ground gleaner, R = raptor, B = bark gleaner,
A = aerial forager (continuous flying).

Primary Food Types: I = invertebrates, V = vertebrates, S = seeds, N = nectar, F = fruits, leaves and buds, O = omnivorous.

(Continued)

Table 1. Concluded.

Common name	Species name	Relative abundance by region							Foraging strata	Foraging method	Primary foods
		Breeding			Wintering			Migration			
		1-3	4-5	6	1-3	4-5	6	1-6			
Gray jay	*Perisoreus canadensis*	-	UC	UC	O	UC	C	IUC	BLC	GB	O
Common raven	*Corvus corax*	UC	C	C	UC	C	C	-	G	GE	O
Common crow	*Corvus brachyrhynchos*	VC	VC	VC	VC	VC	VC	VC	G	G	O
Black-capped chickadee	*Parus atricapillus*	VC	VC	VC	VC	VC	VC	IC	BLC	G	IO
Boreal chickadee	*Parus hudsonicus*	O	UC	C	O	UC	C	IUC	C	G	IO
White-breasted nuthatch	*Sitta carolinensis*	C	C	C	C	C	VC	C	B	B	I
Red-breasted nuthatch	*Sitta canadensis*	C	C	C	C	C	C	VC	B	BG	IO
Brown creeper	*Certhia familiaris*	UC	C	C	UC	UC	UC	C	B	B	I
Mockingbird	*Mimus polyglottos*	UC	O	R	UC	O	O	-	S	G	O
American robin	*Turdus migratorius*	VC	VC	VC	O	O	O	VC	GSL	G	IO
Golden-crowned kinglet	*Regulus satrapa*	C	VC	VC	UC	UC	UC	VC	C	G	I
Starling	*Sturnus vulgaris*	VC	VC	VC	C	C	C	VC	G	G	O
Yellow-rumped warbler	*Dendroica coronata*	VC	VC	VC	UC	O	R	VC	LC	G	I
House sparrow	*Passer domesticus*	VC	VC	VC	C	C	C	-	G	E	O
Brown-headed cowbird	*Molothrus ater*	VC	VC	VC	UC	UC	UC	VC	GS	GE	O
Cardinal	*Richmondena cardinalis*	UC	O	R	UC	O	O	-	S	G	O
Evening grosbeak	*Hesperiphona vespertina*	UN	UC	C	VC	VC	VC	VC	C	G	O
Purple finch	*Carpodacus purpureus*	VC	VC	VC	UC	UC	UC	VC	C	G	I
House finch	*Carpodacus mexicanus*	UC	UN	-	UC	UN	-	-	C	G	IO
Pine siskin	*Spinus pinus*	UC	UC	UC	C	C	C	VC	GC	GP	OS
American goldfinch	*Spinus tristis*	VC	VC	VC	C	C	C	VC	GSC	G	IF
Red crossbill	*Loxia curvirostra*	UC	C	C	UC	UC	UC	UC	C	GP	S
White-winged crossbill	*Loxia leucoptera*	UC	UC	UC	UC	UC	UC	UC	C	GP	S
Dark-eyed junco	*Junco hyemalis*	VC	VC	VC	O	O	O	VC	GSL	G	O
White-throated sparrow	*Zonotrichia albicollis*	VC	VC	VC	O	O	O	VC	GS	GE	O
Song sparrow	*Melospiza melodia*	VC	VC	VC	O	O	O	VC	GSM	G	O

Table 2. Relative Abundance, Feeding Methods, Food Types, and Preferred Habitats of Breeding Migratory Terrestrial Birds in Coastal Maine.

Common name	Species name	Relative abundance by region					Foraging strata	Foraging method	Primary foods
		Breeding			Wintering	Migration			
		1-3	4-5	6	1-6	1-6			
Cooper's hawk	*Accipiter cooperii*	UN	UN	UN	R	O	AG	R	V
Red-shouldered hawk	*Buteo lineatus*	UC	UC	UC	R	UC	AG	R	V
Broad-winged hawk	*Buteo platypterus*	VC	VC	VC	-	VC	AG	R	IV
Marsh hawk	*Circus cyaneus*	O	UC	UC	O	C	AG	R	V
Osprey	*Pandion haliaetus*	C	VC	VC	-	VC	AG	R	V
Killdeer	*Charadrius vociferus*	VC	VC	VC	-	VC	G	E	O
American woodcock	*Philohela minor*	C	VC	VC	-	VC	G	P	I
Common snipe	*Capella gallinago*	C	C	C	-	C	G	P	I
Upland sandpiper	*Bartramia longicauda*	UC	UC	UC	-	R	G	E	O
Yellow-billed cuckoo	*Coccyzus americanus*	O	O	R	-	O	SM	G	I
Black-billed cuckoo	*Coccyzus erythropthalmus*	C	VC	VC	-	C	SM	G	I
Long-eared owl	*Asio otus*	R	R	R	-	R	AG	R	V
Whip-poor-will	*Caprimulgus vociferus*	UC	UC	UC	-	UC	AG	A	I
Common nighthawk	*Chordeiles minor*	VC	VC	VC	-	VC	A	A	I
Chimney swift	*Chaetura pelagica*	VC	VC	VC	-	VC	A	A	I
Ruby-throated hummingbird	*Archilochus colubris*	C	C	C	-	C	SM	P	IN
Belted kingfisher	*Megaceryle alcyon*	C	C	C	-	C	-	R	V
Common flicker	*Colaptes auratus*	VC	VC	VC	-	VC	GB	EP	I
Yellow-bellied sapsucker	*Sphyrapicus varius*	UC	VC	VC	-	VC	B	P	I
Eastern kingsbird	*Tyrannus tyrannus*	VC	VC	VC	-	VC	S	F	I
Great-crested flycatcher	*Myiarchus crinitus*	C	C	C	-	C	C	F	I

Relative Abundance: R = rare, O = occasional, UC = uncommon, C = common, VC = very common, UN = status unknown, I = irregular (not present every year), used to modify relative abundance terms.

Foraging Strata: A - aerial (continuous flying), S = shrub, L = low canopy, G = ground, B = bark, C = high canopy.

Foraging Method: G = foliage gleaner, P = prober, F = flycatcher, E = ground gleaner, R = raptor, B = bark gleaner, A = aerial forager (continuous flying).

Primary Food Types: I = invertebrates, V = vertebrates, S = seeds, N = nectar, F = fruits, leaves and buds, O = omnivorous.

(Continued)

Table 2. Continued.

Common name	Species name	Relative abundance by region					Foraging strata	Foraging method	Primary foods
		Breeding			Wintering	Migration			
		1-3	4-5	6	1-6	1-6			
Eastern phoebe	Sayornis phoebe	C	C	C	-	C	MCB	FG	I
Yellow-bellied flycatcher	Empidonax flaviventris	UC	UC	VC	-	C	S	F	I
Alder flycathcer	Empidonax alnorum	VC	VC	VC	-	VC	C	F	I
Least flycatcher	Empidonax minimus	VC	VC	VC	-	VC	SM	F	I
Eastern wood pewee	Contopus virens	VC	VC	VC	-	VC	M	F	I
Olive-sided flycatcher	Nuttallornis borealis	UN	C	C	-	C	MC	F	I
Tree swallow	Iridoprocne bicolor	VC	VC	VC	-	VC	A	A	I
Bank swallow	Riparia riparia	UC	C	VC	-	VC	A	A	I
Rough-winged swallow	Stelgidopteryx ruficollis	UC	UC	UC	-	UC	A	A	I
Barn swallow	Hirundo rustica	VC	VC	VC	-	VC	A	A	I
Cliff swallow	Petrochelidon pyrrhonota	VC	VC	VC	-	VC	A	A	I
Purple martin	Progne subis	UC	UC	UC	-	UC	A	A	I
House wren	Troglodytes aedon	UC	UC	UC	-	UC	S	G	I
Winter wren	Troglodytes troglodytes	UC	C	C	-	VC	S	G	I
Long-billed marsh wren	Telmatodytes palustris	C	C	C	-	UC	S	G	I
Short-billed marsh wren	Cisto-thorus platensis	R	R	R	-	R	S	G	I
Gray catbird	Dumetella carolinensis	VC	VC	VC	-	VC	S	G	I
Brown thrasher	Toxostoma rufum	C	C	C	-	C	G	E	O
Wood thrush	Hylocichla mustelina	VC	VC	VC	-	VC	S	G	I
Hermit thrush	Hylocichla guttata	VC	C	VC	-	VC	S	G	I
Swainson's thrush	Hylocichla ustulata	C	VC	VC	-	VC	SM	G	I
Veery	Hylocichla fuscescens	VC	VC	VC	-	VC	S	G	I
Eastern bluebird	Sialia sialis	UC	UC	UC	-	UC	S	F	I
Ruby-crowned kinglet	Regulus calendula	C	VC	VC	-	VC	SM	G	I
Cedar waxwing	Bombycilla cedrorum	VC	VC	VC	R	VC	SG	G	O
Loggerhead shrike	Lanius ludovicianus	UN	UN	UN	-	R	AG	R	IV
Yellow-throated vireo	Vireo flavifrons	UN	UN	UN	-	R	C	G	I
Solitary vireo	Vireo solitarius	C	VC	VC	-	VC	C	G	I
Red-eyed vireo	Vireo olivaceus	VC	VC	VC	-	VC	C	G	I
Warbling vireo	Vireo gilvus	C	VC	VC	-	C	C	G	I
Black-and-white warbler	Mniotilta varia	VC	VC	VC	-	VC	B	G	I

(Continued)

Table 2. Continued.

Common name	Species name	Relative abundance by region Breeding 1-3	 4-5	 6	 Wintering 1-6	 Migration 1-6	Foraging strata	Foraging method	Primary foods
Tennessee warbler	*Vermivora peregrina*	UC	UC	VC	-	C	SL	G	I
Nashville warbler	*Vermivora ruficapilla*	VC	VC	VC	-	VC	C	G	I
Parula warbler	*Parula americana*	VC	VC	VC	-	VC	C	G	I
Yellow warbler	*Dendroica petechia*	VC	VC	VC	-	VC	S	G	I
Cape may warbler	*Dendroica tigrina*	O	UC	C	-	VC	C	G	I
Black-throated green warbler	*Dendroica virens*	VC	VC	VC	-	VC	C	G	I
Black-throated blue warbler	*Dendroica caerulescens*	VC	VC	VC	-	VC	S	G	I
Blackburnian warbler	*Dendroica fusca*	VC	VC	VC	-	VC	C	G	I
Chestnut-sided warbler	*Dendroica pensylvanica*	VC	VC	VC	-	VC	C	G	I
Bay-breasted warbler	*Dendroica castanea*	UC	C	VC	-	VC	LC	G	I
Blackpoll warbler	*Dendroica striata*	R	UC	UC	-	VC	SL	G	I
Pine warbler	*Dendroica pinus*	C	C	UC	R	C	C	G	I
Magnolia warbler	*Dendroica magnolia*	VC	VC	VC	-	VC	S	G	I
Prairie warbler	*Dendroica discolor*	O	O	UN	-	O	S	G	I
Palm warbler	*Dendroica palmarum*	UN	UC	C	-	VC	S	G	I
Ovenbird	*Seiurus aurocapillus*	VC	VC	VC	-	VC	GS	G	I
Northern water-thrush	*Seiurus noveboracensis*	UN	C	VC	-	VC	GSL	G	I
Mourning warbler	*Oporornis philadelphia*	O	O	UC	-	UN	S	G	I
Common yellow-throat	*Geothlypis trichas*	VC	VC	VC	-	VC	S	G	I
Wilson's warbler	*Wilsonia pusilla*	UC	UC	C	-	C	SC	G	I
Canada warbler	*Wilsonia canadensis*	C	VC	VC	-	VC	SL	G	I
American redstart	*Setophaga ruticilla*	VC	VC	VC	-	VC	L	GF	I
Bobolink	*Dolichonyx oryzivorus*	VC	VC	VC	-	VC	G	G	I
Eastern meadowlark	*Sturnella magna*	VC	VC	C	-	C	G	G	O
Red-winged blackbird	*Agelaius phoeniceus*	VC	VC	VC	O	VC	S	G	O
Northern oriole	*Icterus galbula*	C	C	UC	-	C	C	G	I
Rusty blackbird	*Euphagus carolinus*	-	-	VC	O	C	SG	GE	O
Common grackle	*Quiscalus quiscula*	VC	VC	VC	O	VC	SG	GE	O
Scarlet tanager	*Piranga olivacea*	C	C	UC	-	VC	C	G	I
Rose-breasted grosbeak	*Pheucticus ludovicianus*	VC	VC	VC	-	VC	C	G	I
Indigo bunting	*Passerina cyanea*	C	C	UC	-	C	C	G	I
Rufous-sided towhee	*Pipilo erythrophthalmus*	VC	VC	UC	R	C	S	E	O

(Continued).

Table 2. Concluded.

Common name	Species name	Relative abundance by region					For-aging strata	For-aging method	Pri-mary foods
		Breeding			Wintering	Migra-tion			
		1-3	4-5	6	1-6	1-6			
Savannah sparrow	*Passerculus sandwichensis*	VC	VC	VC	-	VC	SG	G	O
Sharp-tailed sparrow	*Ammospiza caudacuta*	VC	VC	VC	-	VC	SG	G	O
Vesper sparrow	*Pooecetes gramineus*	O	UC	C	-	C	SG	G	O
Chipping sparrow	*Spizella passerina*	VC	VC	VC	-	VC	S	GE	O
Field sparrow	*Spizella pusilla*	C	UC	UC	-	UC	S	GE	O
Lincoln's sparrow	*Melospiza lincolnii*	R	UC	UC	-	UC	S	G	O
Swamp sparrow	*Melospiza georgiana*	C	VC	VC	-	VC	S	G	O

Table 3. Relative Abundance, Feeding Methods, Food Types, and Preferred Habitats of Non-Breeding, Migratory Terrestrial Birds in Coastal Maine.

Common name	Species name	Relative abundance migration	Foraging strata	Foraging method	Primary food
Golden eagle	Aquila chrysaetos	R	AG	R	V
Gyrfalcon	Falco rusticolus	R	AG	R	V
Peregrine falcon	Falco peregrinus	UC	AG	R	V
Merlin	Falco columbarius	UC	AG	R	V
American golden plover	Pluvialis dominica	UC	G	E	O
Baird's sandpiper	Erolia bairdii	R	G	E	O
Buff-breasted sandpiper	Tryngites subruficollis	R	G	E	O
Whimbrel	Numenius phaeopus	UC	G	E	O
Red-headed woodpecker	Melanerpes erythrocephalus	R	B	P	I
Western kingbird	Tyrannus verticalis	O	SL	F	I
Gray-cheeked thrush	Hylocichla minima	UC	GS	G	I
Water pipit	Anthus spinoletta	C	G	E	O
White-crowned sparrow	Zonotrichia leucophrys	C	G	E	O
Fox sparrow	Passerella iliaca	C	G	G	O

Relative Abundance:	R = rare, O = occasional, UC = uncommon, C = common, VC = very common, UN = status unknown, I = irregular (not present every year), used to modify relative abundance terms.
Foraging Strata:	A = aerial (continuous flying), S = shrub, L = low canopy, G = ground, B = bark, C = high canopy.
Foraging Method:	G = foliage gleaner, P = prober, F = flycatcher, E = ground gleaner, R = raptor, B = bark gleaner, A = aerial forager (continuous flying).
Primary Food Types:	I = invertebrates, V = vertebrates, S = seeds, N = nectar, F = fruits, leaves and buds, O = omnivorous.

Table 4. Relative Abundance, Feeding Methods, Food Types, and Preferred Habitats of Non-Breeding Winter Resident Terrestrial Birds in Coastal Maine.

Common name	Species name	Relative abundance by region				Foraging strata	Foraging methods	Primary foods
		Wintering			Migration			
		1-3	4-5	6	1-6			
Rough-legged hawk	*Buteo lagopus*	UC	UC	C	UC	AG	R	V
Snowy owl	*Nyctea scandiaca*	IUC	IUC	IC	UC	AG	R	V
Great gray owl	*Strix nebulosa*	R	R	R	R	AG	R	V
Short-eared owl	*Asio flammeus*	O	O	O	UC	AG	R	V
Hawk owl	*Surnia ulula*	R	R	R	R	AG	R	V
Boreal owl	*Aegolius funereus*	R	R	R	UN	AG	R	V
Tufted titmouse	*Parus bicolor*	O	R	R	R	LCS	G	IO
Bohemian waxwing	*Bombycilla garrulus*	UC	UC	O	UC	SL	G	F
Northern shrike	*Lanius excubitor*	UC	UC	C	UC	GL	R	V
Pine grosbeak	*Pinicola enucleator*	IC	IC	IC	IC	SCL	GP	F
Common redpoll	*Acanthis flammea*	IC	IC	IC	IC	GS	GE	S
Hoary redpoll	*Acanthis hornemanni*	R	R	R	R	GS	GE	S
Tree sparrow	*Spizella arborea*	C	C	C	C	SG	E	O
Lapland longspur	*Calcarius lapponicus*	R	R	R	UC	G	E	O
Snow bunting	*Plectrophenax nivalis*	C	C	C	C	G	E	O

Relative Abundance:	R = rare, O = occasional, UC = uncommon, C = common, VC = very common, UN = status unknown, I = irregular (not present every year), used to modify relative abundance terms.
Foraging Strata:	A = aerial (continuous flying), S = shrub, L = low canopy, G = ground, B = bark, C = high canopy.
Foraging Method:	G = foliage gleaner, P = prober, F = flycatcher, E = ground gleaner, R = raptor, B = bark gleaner, A = aerial forager (continuous flying).
Primary Food Types:	I = invertebrates, V = vertebrates, S = seeds, N = nectar, F = fruits, leaves and buds, O = omnivorous.

Table 5. List of Extremely Rare and Accidental Terrestrial Birds in Coastal Maine.

Common name	Species name	Common name	Species name
Turkey vulture	Cathartes aura	White-eyed vireo	Vireo griseus
Black vulture	Coragyps atratus	Golden-winged warbler	Vermivera chrysoptera
Willow ptarmigan	Lagopus lagopus	Blue-winged warbler	V. pinus
Bobwhite	Colinus virginianus	Orange-crowned warbler	V. celata
Swainson's hawk	Buteo swainsoni	Yellow-breasted chat	Icteria virens
Ground dove	Culumbrigallina passerina	Connecticut warbler	Oporornis agilis
Barn owl	Tyto alba	Louisiana waterthrush	Seiurus motacilla
Screech owl	Otus asio	Western meadowlark	Sturnella neglecta
Chuck-will's-widow	Caprimulgus carolinensis	Brewer's blackbird	Euphagus cyanocephalus
Hummingbird sp.	Selasphorus sp.	Yellow-headed blackbird	Xanthocephalus xanthocephalus
Red-bellied woodpecker	Centurus carolinus	Summer tanager	Piranga rubra
Western kingbird	Tyrannus verticalis	Western tanager	P. ludoviviana
Fork-tailed flycatcher	Muscivora tyrannus	Black-headed grosbeak	Pheucticus melanocephalus
Scissor-tailed flycatcher	M. forfic	Orchard oriole	Icterus spurius
Ash-throated flycatcher	Myriarchus cinerascens	Blue grosbeak	Guiraca caerulea
Willow flycatcher	Empidonax traillii	Lazuli bunting	Passerina amoena
Acadian flycatcher	E. virescens	Painted bunting	P. ciris
Black-billed magpie	Pica pica	Dickcissel	Spiza americana
Fish crow	Corvus ossifragus	Grasshopper sparrow	Ammodramus savannarum
Carolina wren	Thryothorus ludovicianus	Lark bunting	Calamospiza melanocorys
Varied thrush	Ixoreus naevius	Lark sparrow	Chondestes grammacus
Wheatear	Oenanthe oenanthe	Le conte's sparrow	Passerherbulus caudacutus
Blue-gray gnatcatcher	Polioptila caerulea	Seaside sparrow	Ammospiza maritima
King rail	Rallus elegans	Clay-colored sparrow	Spizella pallida
Clapper rail	Rallus longirostris	Harris' sparrow	Zonotrichia querula
Purple gallinule	Porphyrula martinica	Prothonotary warbler	Protonataria citrea
Philadelphia vireo	Vireo philadelphicus	Cerulean warbler	Dendroica caerulea
Kentucky warbler	Oporornis formosus	Yellow-throated warbler	Dendroica dominica
Hooded warbler	Wilsonia citrina		

CHAPTER 17

Table 1 Amount of Habitats (sq mi) and Densities of Selected Upland Furbearer and Game Species Found in Wildlife Management Unit 6[a].

Habitat	Area		Densities						
			Fisher	Bobcat	Raccoon	Fox	Coyote	Marten	Snow-shoe hare
	(sq mi)		(animals/square mile)						
Forestland									
Balsam fir	454.2		---	---	---	---	---	---	---
saw timber		52.2	---	1/8	0	1/2	---	0	200
pole timber		86.9	---	3/8	0	1/2	---	0	100
seedling sapling		315.1	---	5/8	0	1	---	0	650
R. spruce-Balsam fir	382.5		---	---	---	---	---	---	---
saw timber		156.5	---	1/8	0	1/2	---	0	150
pole timber		139.1	---	3/8	0	1/2	---	0	100
seedling sapling		86.9	---	5/8	0	1	---	0	650
Black spruce	245.6		---	---	---	---	---	---	---
pole timber		228.2	---	3/8	0	1/2	---	---	100
seedling sapling		17.4	---	5/8	0	1	---	0	260
B. ash - a. elm - r. maple	210.8		---	---	---	---	---	---	---
saw timber		17.4	---	1/8	12	1/2	---	0	100
pole timber		34.8	---	3/8	6	1/2	---	0	0
seedling eapling		158.6	---	5/8	6	1	---	0	400
N. white cedar	208.7		---	---	---	---	---	---	---
saw timber		104.3	---	1/8	0	1/2	---	0	260
pole timber		52.2	---	3/8	0	1/2	---	0	100
seedling sapling		52.2	---	5/8	0	1	---	0	650
Birch	173.9		---	---	---	---	---	---	---
pole timber		34.8	---	3/8	0	1/2	---	0	0
seedling sapling		86.9	---	5/8	0	1	---	0	500
nonstocked		52.2	---	0	0	1	---	0	0
Aspen	139.1		---	---	---	---	---	---	---
saw timber		17.4	---	1/8	12	1/2	---	0	300
pole timber		17.4	---	3/8	6	1/2	---	0	0
seedling sapling		104.3	---	5/8	6	1	---	0	500

[a] Adapted from Anderson et al 1975.

(Continued)

Table 1 (Continued).

Habitat	Area		Densities						
			Fisher	Bobcat	Raccoon	Fox	Coyote	Marten	Snow-shoe hare
	(sq mi)		(animals/square mile)						
Forestland (Cont.)									
S. maple - beech - y. birch	86.9		---	---	---	---	---	---	---
seedling sapling		86.9	---	5/8	0	1	---	0	400
Northern red oak	52.2		---	---	---	---	---	---	---
pole timber		17.4	---	3/8	6	1/2	---	0	100
seedling sapling		34.8	---	5/8	6	1	---	0	0
White pine-hemlock	52.2		---	---	---	---	---	---	---
saw timber		34.8	---	1/8	2	1/2	---	0	130
seedling sapling		17.4	---	5/8	2	---	---	0	650
Hemlock	34.8		---	---	---	---	---	---	---
saw timber		17.4	---	1/8	2	1/2	---	0	130
pole timber		17.4	---	3/8	2	1/2	---	0	100
W. pine - n.r. oak - w. ash	34.8		---	---	---	---	---	---	---
seedling sapling		34.8	---	5/8	6	1	---	0	650
Tamarack	34.8		---	---	---	---	---	---	---
saw timber		17.4	---	1/8	0	1/2	---	0	150
seedling sapling		17.4	---	5/8	0	1	---	0	260
White spruce	34.8		---	---	---	---	---	---	---
saw timber		17.4	---	1/8	0	1/2	---	0	130
seedling sapling		17.4	---	5/8	0	1	---	0	100
White pine	17.4		---	---	---	---	---	---	---
saw timber		17.4	---	1/8	2	1/2	---	0	130

(Continued)

Table 1 Concluded.

Habitat	Area	Densities						
		Fisher	Bobcat	Raccoon	Fox	Coyote	Marten	Snow-shoe hare
	(Acres)	(number per acre)						
Wetlands								
Open fresh water	81,651	0	0	0	0	0	0	---
Tidal flats	34,105	0	0	0	0	0	0	---
Shrub swamp	11,493	0	0	0	1/640	0	0	---
Bog	9257	0	0	0	0	0	0	---
Fresh meadow	5757	0	0	12/640	1/640	0	0	---
Shallow fresh marsh	3775	0	0	0	1/640	0	0	---
Salt meadow	2677	0	0	12/640	0	0	0	---
Deep fresh marsh	1819	0	0	0	0	0	0	---
Reg. fl. salt marsh	1498	0	0	0	0	0	0	---
Seasonally flooded	245	0	0	12/640	1/640	0	0	---
Shallow fr. marsh coastal	56	0	0	0	0	0	0	---

Table 2 Amount of Habitats and Densities ot Selected Upland Furbearers and Game Species Found in Wildlife Managment Unit 7 (Adapted from Anderson et al. 1975a).

Habitat	Area		Densities						
			Fisher	Bobcat	Raccoon	Fox	Coyote	Marten	Snowshoe hare
Forestland	(square mile)		(animals/square mile)						
Balsam fir	362.3		---	---	---	---	---	---	---
saw timber		22.0	---	1/8	0	1/2	---	0	200
pole timber		64.3	---	3/8	0	1/2	---	0	100
seedling sapling		276.0	---	5/8	0	1	---	0	650
B. ash - a. elm - r. maple	362.2		---	---	---	---	---	---	---
saw timber		64.3	---	1/8	12	1/2	---	0	100
pole timber		64.3	---	3/8	6	1/2	---	0	0
seedling sapling		233.6	---	5/8	6	1	---	0	400
White pine	235.3		---	---	---	---	---	---	---
saw timber		22.0	---	1/8	2	1/2	---	0	130
pole timber		22.0	---	3/8	2	1/2	---	0	100
seedling sapling		169.3	---	5/8	2	1	---	0	650
nonstocked		22.0	---	0	0	1	---	0	0
S. maple - beech - y. birch	128.7		---	---	---	---	---	---	---
saw timber		22.0	---	1/8	0	1/2	---	0	100
pole timber		22.0	---	3/8	0	1/2	---	0	0
seedling sapling		84.7	---	5/8	0	1	---	0	400
Northern red oak	86.3		---	---	---	---	---	---	---
saw timber		22.0	---	1/8	12	1/2	---	0	100
pole timber		22.0	---	3/8	6	1/2	---	0	0
seedling sapling		42.3	---	5/8	6	1	---	0	400
Aspen	84.7		---	---	---	---	---	---	---
seedling sapling		84.7	---	5/8	6	1	---	0	500
R. spruce - balsam fir	66.0		---	---	---	---	---	---	---
saw timber		22.0	---	1/8	0	1/2	---	0	150
pole timber		22.0	---	3/8	0	1/2	---	0	100
seedling sapling		22.0	---	5/8	0	1	---	0	650
N. white cedar	66/0		---	---	---	---	---	---	---
saw timber		22.0	---	1/8	0	1/2	---	0	260
pole timber		22.0	---	3/8	0	1/2	---	0	100
seedling sapling		22.0	---	5/8	0	1	---	0	650

(Continued)

Table 2 Continued.

Habitat	Area		Densities						
			Fisher	Bobcat	Raccoon	Fox	Coyote	Marten	Snowshoe hare
Forestland (Cont.)	(square mile)		(animals/square mile)						
White pine-hemlock	64.3		---	---	---	---	---	---	---
saw timber		42.3	---	1/8	2	1/2	---	0	130
pole timber		22.0	---	3/8	2	1/2	---	0	100
Hemlock	64.3		---	---	---	---	---	---	---
pole timber		22.0	---	3/8	2	1/2	---	0	100
seedling sapling		42.3	---	5/8	2	1	---	0	650
Birch	44.0		---	---	---	---	---	---	---
saw timber		22.0	---	1/8	0	1/2	---	0	300
pole timber		22.0	---	3/8	0	1/2	---	0	0
Mixed hardwoods	22.0		---	---	---	---	---	---	---
nonstocked		22.0	---	0	0	1	---	0	0
Wetlands	(Acres)		(animals/acre)						
Open fresh water	63,493		0	0	0	0	0	0	---
Shrub swamp	12,658		0	0	0	1/640	0	0	---
Tidal flats	12,652		0	0	0	0	0	0	---
Fresh meadow	5539		0	0	12/640	1/640	0	0	---
Shallow fresh marsh	4738		0	0	0	1/640	0	0	---
Deep fresh marsh	3581		0	0	0	0	0	0	---
Bog	3408		0	0	0	0	0	0	---
Salt meadow	1639		0	0	12/640	0	0	0	---
Deep fr. marsh coastal	586		0	0	0	0	0	0	---

(Continued)

Table 2 Concluded.

Habitat	Area	Densities						
		Fisher	Bobcat	Raccoon	Fox	Coyote	Marten	Snowshoe hare
Rivers, Streams and Shorelines	(linear miles)							
Beaver streams	1062	0	0	0	0	0	0	0
Total streams	2616	0	0	0	0	0	0	0
Lake & pond shores	511	0	0	0	0	0	0	0
Agricultural	(square miles)							
Cropland	127.3	0	0	---	---	---	0	0
Improved pasture	105.1	0	0	---	---	---	0	0
Idle farmland	22.1	0	0	---	---	---	0	0
Ocher farmland	22.1	0	0	---	---	---	0	0
Developed	(Acres)							
Urban-rural urban	26,088	0	0	0	0	0	0	0
Yeararound dwellings	18,135	0	0	0	0	0	0	0
Rural road surfaced	8996	0	0	0	0	0	0	0
Farmsteads	8973	0	0	0	0	0	0	0
Rural road unsurfaced	5312	0	0	0	0	0	0	0
Seasonal dwellings	4677	0	0	0	0	0	0	0
Other	3592	0	0	0	0	0	0	0
Railroad	930	0	0	0	0	0	0	0
Total mammal populations								
Minimum		1540	119	5000	803	110	0	266,800
Maximum		3100	279	14,900	2410	435	0	589,200

Table 3 Amount of Habitats and Denisites of Selected Upland Furbearers and Game Species Found in Wildlife Management Unit 8 (Adapted from Anderson et al. 1975).

Habitat	Area		Densities						
			Fisher	Bobcat	Raccoon	Fox	Coyote	Marten	Snowshoe hare
Forestland	(square miles)								
White pine	576.4		---	---	---	---	---	---	---
saw timber		296.8	---	1/8	2	1/2	---	0	130
pole timber		74.7	---	3/8	2	1/2	---	0	100
seedling sapling		204.9	---	5/8	2	1	---	0	650
B. ash - a. elm - r. maple	318.0		---	---	---	---	---	---	---
saw timber		19.2	---	1/8	12	1/2	---	0	100
pole timber		74.7	---	3/8	6	1/2	---	0	0
seedling sapling		224.1	---	5/8	6	1	---	0	400
Northern red oak	168.5		---	---	---	---	---	---	---
pole timber		93.8	---	3/8	6	1/2	---	0	0
seedling sapling		74.7	---	5/8	6	1	---	0	400
Hemlock	166.6		---	---	---	---	---	---	---
saw timber		111.1	---	1/8	2	1/2	---	0	130
pole timber		55.5	---	3/8	2	1/2	---	0	100
Birch	149.4		---	---	---	---	---	---	---
pole timber		19.2	---	3/8	0	1/2	---	0	0
seedling sapling		130.2	---	5/8	0	1	---	0	500
S. maple - beech - y. birch	109.2		---	---	---	---	---	---	---
saw timber		36.4	---	1/8	0	1/2	---	0	100
pole timber		36.4	---	3/8	0	1/2	---	0	0
seedling sapling		36.4	---	5/8	0	1	---	0	400
White pine-hemlock	93.9		---	---	---	---	---	---	---
saw timber		55.5	---	1/8	2	1/2	---	0	130
pole timber		19.2	---	3/8	2	1/2	---	0	100
seedling sapling		19.2	---	5/8	2	1	---	0	650
Aspen	93.9		---	---	---	---	---	---	---
pole timber		19.2	---	3/8	6	1/2	---	0	0
seedling sapling		74.7	---	5/8	6	1	---	0	500

(Continued).

Table 3 Continued.

Habitat	Area		Densities						
			Fisher	Bobcat	Raccoon	Fox	Coyote	Marten	Snowshoe hare
Forestland (cont.)	(square miles)								
W. pine - n.r. oak - w. ash	74.8		---	---	---	---	---	---	---
saw timber		19.2	---	1/8	12	1/2	---	0	260
pole timber		19.2	---	3/8	6	1/2	---	0	100
seedling sapling		36.4	---	5/8	6	1	---	0	650
Balsam fir	38.4		---	---	---	---	---	---	---
saw timber		19.2	---	1/8	0	1/2	---	0	200
seedling sapling		19.2	---	5/8	0	1	---	0	650
Black spruce	38.4		---	---	---	---	---	---	---
seedling sapling		19.2	---	5/8	0	1	---	0	260
nonstocked		19.2	---	0	0	1	---	0	0
R. spruce - balsam fir	36.4		---	---	---	---	---	---	---
saw timber		36.4	---	1/8	0	1/2	---	0	150
Tamarack	19.2		---	---	---	---	---	---	---
seedling sapling		19.2	---	5/8	0	1	---	0	260
White spruce	19.2		---	---	---	---	---	---	---
seedling sapling		19.2	---	5/8	0	1	---	0	650
Black cherry	19.2		---	---	---	---	---	---	---
seedling sapling		19.2	---	5/8	6	1	---	0	500
Wetlands	(Acres)								
Open fresh water	96,869		0	0	0	0	0	0	---
Tidal flats	12,443		0	0	0	0	0	0	---
Shrub swamp	12,386		0	0	0	1/640	0	0	---
Salt meadow	10,954		0	0	12/640	0	0	0	---
Shallow fr. marsh coastal	9478		0	0	0	0	0	0	---
Fresh meadow	6467		0	0	12/640	1/640	0	0	---
Bog	5921		0	0	0	0	0	0	---

(Continued)

Table 3 Continued.

Habitat	Area	Densities						
		Fisher	Marten	Raccoon	Fox	Coyote	Marten	Snowshoe hare
Wetlands (cont.)	(Acres)							
Deep fresh marsh	4008	0	0	0	0	0	0	---
Shallow fresh marsh	2379	0	0	0	1/640	0	0	---
Deep fr. marsh coastal	1274	0	0	0	0	0	0	---
Reg. fl. salt marsh	141	0	0	0	0	0	0	---
Seasonally flooded	1	0	0	12/640	1/640	0	0	---
Rivers, streams, and shorelines	(linear miles)							
Beaver streams	1027	0	0	0	0	0	0	---
Total streams	2530	0	0	0	0	0	0	---
Lake & pond shores	770	0	0	0	0	0	0	---
Agricultural	(square miles)							
Improved pasture	169.7	0	0	---	---	---	0	---
Cropland	54.8	0	0	---	---	---	0	---
Idle farmland	36.6	0	0	---	---	---	0	---
Developed	(Acres)							
Urban-rural urban	139,513	0	0	0	0	0	0	---
Year round dwellings	30,536	0	0	0	0	0	0	---
Farmsteads	21,282	0	0	0	0	0	0	---
Rural road surfaced	12,811	0	0	0	0	0	0	---

(Continued)

Table 3 Concluded.

Habitat	Area	Densities						
		Fisher	Bobcat	Raccoon	Fox	Coyote	Marten	Snowshoe hare
Developed (cont.)	(Acres)							
Seasonal dwellings	9537	0	0	0	0	0	0	---
Rural road unsurfaced	6298	0	0	0	0	0	0	---
Other	5149	0	0	0	0	0	0	---
Railroad	1543	0	0	0	0	0	0	---
Total mammal populations								
minimum		1120	89	7700	857	90	0	236,100
maximum		2240	207	23,000	2568	370	0	552,300

Table 4 Habitat Abundance and Population Densities of Aquatic Furbearers in Wildlife Management Unit 6 (Adapted from Anderson et al. 1975).

Habitat	Area	Densities			
		Beaver	Mink	Otter	Muskrat
Wetlands	(Acres)				
Open fresh water	81,651	---	---	---	0
Tidal flat	34,105	---	---	---	0
Shrub swamp	11,493	---	---	---	0.75
Bog	9257	---	---	---	0
Fresh meadow	5757	---	---	---	0
Shallow fresh marsh	3775	---	---	---	1.25
Salt meadow	2677	---	---	---	1.25
Deep fresh marsh	1819	---	---	---	2.0
Reg. fl. salt marsh	1498	---	---	---	1.25
Seasonally flooded	245	---	---	---	0
Shallow fr. marsh coastal	56	---	---	---	0
Rivers, streams and shorelines	(miles)				
Beaver streams	1375	1.74	---	---	2.5
Total streams	3259	---	0.52	0.078	---
Lake & pond shores	641	---	0.52	0.155	---
Total mammal populations					
minimum		1432	1176	176	12,900
maximum		2387	3528	529	38,400

Table 5 Habitat Abundance and Population Densities of Aquatic Furbearers in Wildlife Management Unit 7 (Adapted from Anderson et al. 1975).

Habitat	Area	Densities			
		Beaver	Mink	Otter	Muskrat
Wetlands	(Acres)				
Open fresh water	63,493	---	---	---	0
Shrub swamp	12,658	---	---	---	1.25
Tidal flats	12,652	---	---	---	0
Fresh meadow	5539	---	---	---	0
Shallow fresh marsh	4738	---	---	---	1.25
Deep fresh marsh	3581	---	---	---	2.5
Bog	3408	---	---	---	0.125
Salt meadow	1639	---	---	---	1.25
Deep fr. marsh coastal	586	---	---	---	1.5
Rivers, streams, and shorelines	(miles)				
Beaver streams	1062	1.63	---	---	3.5
Total streams	2616	---	0.51	0.072	---
Lake & pond shores	511	---	0.51	0.144	---
Total mammal population					
minimum		1040	802	131	14,800
maximum		1733	2406	393	60,900

Table 6 Habitat Abundance and Population Densities of Aquatic Furbearers in Wildlife Management Unit 8 (Adapted from Anderson et al. 1975 a-d)

Habitat	Area	Densities			
		Beaver	Mink	Otter	Muskrat
Wetlands	(Acres)				
Open fresh water	96,869	---	---	---	0
Tidal flats	12,443	---	---	---	0
Shrub swamp	12,386	---	---	---	1.25
Salt meadow	10,954	---	---	---	1.25
Shallow fr. marsh coastal	9478	---	---	---	0
Fresh meadow	6467	---	---	---	0
Bog	5921	---	---	---	0.125
Deep fresh marsh	4008	---	---	---	2.5
Shallow fresh marsh	2379	---	---	---	1.25
Deep fr. marsh coastal	1274	---	---	---	1.5
Reg. fl. salt marsh	141	---	---	---	1.25
Seasonally flooded	1	---	---	---	0
Rivers, streams, and shorelines	(miles)				
Beaver streams	1027	1.50	---	---	3.5
Total streams	2530	---	0.27	0.048	---
Lake & pond shores	770	---	0.27	0.097	---
Total mammal population					
minimum		927	450	98	19,200
maximum		1545	1351	294	78,000

Table 7 Available Deer Habitat and Densities of Deer for WMUs 6, 7, and 8 [a]

	WMU		
	6	7	8
Deer habitat (acres)			
Woodland [b]	1,390,764	1,003,490	1,225,594
Idle farm	-	28,333	23,398
Marsh etc. [c]	21,951	23,276	21,824
Total	1,412,715	1,055,099	1,270,816
Deer abundance			
Deer/10 sq mi	57-86	88-121	80-111
Total no. (10^3)	12.6-19.0	14.5-20.0	15.8-22.0

[a] data from Banasiak and Hugie (1975)

[b] includes wooded swamps

[c] fresh meadow, shallow fresh marsh, shrub swamp, and 10% of bog areas

Table 8 Available Black Bear Habitat and Bear Population Densities in WMUs 6, 7, and 8[a]

	WMU		
	6	7	8
Bear habitat (acres)			
Woodland [b]	1,068,204	46,080	61,279
Farmland [c]	8877	1439	1835
Wetlands [d]	10,802	496	619
Total	1,087,883	48,015	63,738
Bear abundance			
Bear/10 sq mi	3.2-4.4	2.9-4.0	2.9-3.0
Total no.	541-750	22-30	29-30

[a] data from Hugie and Banasiak (1975)

[b] includes wooded swamp

[c] farmlands include 10% of all types except in units 7 and 8

[d] usable wetlands includes 50% of: seasonally flooded basins, fresh meadow, shrub swamp, and bog--except those in units 7 and 8

Table 9 Moose Habitat Available and Corresponding Moose Population Densities in WMUs 6, 7, and 8[a]

	WMU		
	6	7	8
Moose habitat (acres)			
Softwood	942,103	541,887	630,183
Hardwood	445,661	461,603	595,411
Wetland	32,108	29,924	31,161
Total	1,422,872	1,033,414	1,256,755
Moose abundance			
Moose/10 sq mi	1.4	1.3	1.0
Total no.	350	250	275

[a] data from Dunn et al. (1975)

Table 10 Mammal Species Present on Three Coastal Maine Islands.[a]

Species	Mount Desert	Hog Island	Isle Au Haut
Masked shrew	+	+	o
Water shrew	+	o	o
Thompson's pygmy shrew	+	o	o
Short-tailed shrew	+	o	+
Hairy-tailed mole	+	o	o
Star-nosed mole	+	o	+
Little brown bat	+	o	o
Keen's myotis	+	o	o
Small-footed myotis	+	o	o
Silver-haired bat	+	o	o
Red bat	+	o	o
Snowshow hare	+	o	+
Eastern chipmunk	+	o	o
Woodchuck	+	o	o
Gray squirrel	+	o	o
Red squirrel	+	+	+
Northern flying squirrel	+	+	o
Beaver	+	o	o
Deer mouse	+	o	+
Gapper's red-backed	+	+	o
Meadow vole	+	+	+
Muskrat	+	o	+
Southern bog lemming	+	o	o
Norway rat	+	o	o
House mouse	+	o	o
Meadow jumping mouse	+	o	o
Woodland jumping mouse	+	o	o
Porcupine	+	o	o
Red fox	+	+	o
Black bear	+	o	o
Raccoon	+	+	o
Fisher	+	o	o
Ermine	+	+	+
Long-tailed weasel	+	o	+
Mink	+	+	+
Striped skunk	+	o	o
River otter	+	o	+
Bobcat	+	o	o
White-tailed deer	+	+	+
Moose	+	o	o

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[a] Manville (1942, 1960, 1964) and Morse (1960)

Table 11 Reproductive Characteristics of Terrestrial Mammals in Coastal Maine[a]

Species	Young per litter	Litters per year	Minimum age first breeding
Virginia oppossum	8 (5-13)	2-3	1
Masked shrew	7 (2-10)	3	1
Water shrew	(4-8)	-	-
Smokey shrew	6 (2-8)	3	-
Short-tailed shrew	5,7 (3-10)	2-3	1
Hairy-tailed mole	(4-5)	1	1
Star-nosed mole	(3-7)	1	.6
Little brown bat	1 (1-2)	1	-
Keen's myotis	-	1	-
Small-footed myotis	1	1	-
Silver-haired bat	2	1	-
Eastern pipistrelle	2	1	-
Big brown bat	2 (1-2)	1	-
Red bat	2,3 (1-5)	1	-
Hoary bat	2	1	-
New England cottontail	5 (3-8)	2-3	-
Snowshoe hare	3 (1-6)	4	-
Eastern chipmunk	4,5 (1-8)	1-2	.3-1
Woodchuck	4,5 (2-9)	1	2
Gray squirrel	2,3 (1-9)	2	-
Red squirrel	4,5 (1-7)	1 (1-2)	-
Southern flying squirrel	3-4 (2-6)	2	.8-1
Northern flying squirrel	3,4 (2-6)	2	.8-1
Beaver	3,5 (1-9)	1	1.5-2
Deer mouse	4,6 (3-7)	3-4	.10-.15
White-footed mouse	5 (3-7)	-	.10-.15
Gapper's red-backed vole	6 (2-8)	2-3	-
Meadow vole	4,5 (1-9)	8-10	.08-.10
Pine vole	2-4	1	.16
Muskrat	6,7 (1-14)	3 (1-5)	-
Southern bog lemming	2-5 (1-8)	3-5	-
Norway rat	6 (3-12)	7-8 (6-22)	.20
House mouse	6 (5-8)	4-5 (3-12)	.15
Meadow jumping mouse	5,6 (2-8)	2 (2-3)	.3-1
Woodland jumping mouse	5 (1-8)	1	.10
Porcupine	1	1	1.3
Coyote	5-7 (4-8)	1	1-2
Red fox	4-5 (1-10)	1	1
Gray fox	3,5 (2-7)	1	-

[a] Godin 1977.

(Continued)

Table 11 (Concluded).

Species	Young per litter	Litters per year	Minimum age first breeding
Black bear	2 (1-5)	.5	3.5
Raccoon	4 (3-7)	1	1
Marten	3,4 (1-5)	1	1-2
Fisher	3 (1-4)	1	2
Ermine	6,7 (4-9)	1	.3
Long-tailed weasel	6,8 (1-12)	1	.3
Mink	3-4 (2-10)	1	-
Striped skunk	6-7 (2-10)	1	1
River otter	2-3 (1-6)	1	2+
Bobcat	2 (1-4)	1 (1-2)	2
White-tailed deer	2 (1-3)	1	.5-2.5
Moose	1 (1-2)	1	1.5-2.5

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